(v. 2.2) Control Server User Guide

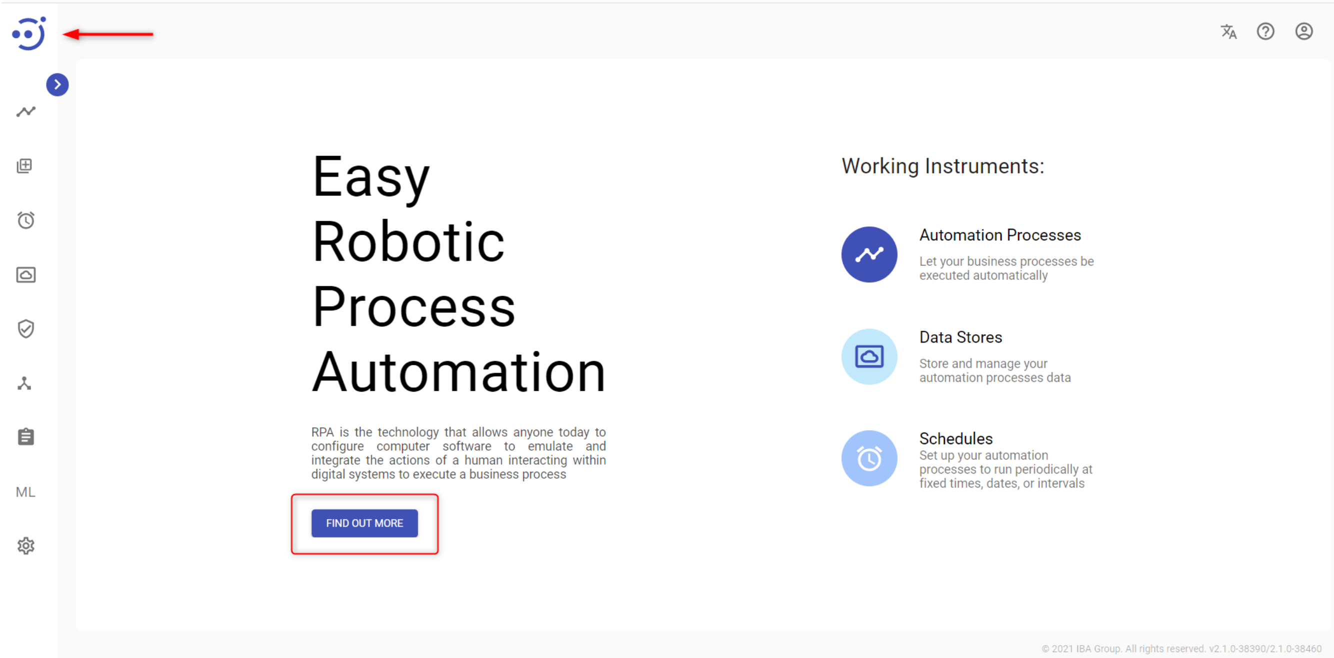
The EasyRPA Control Server is the heart of the EasyRPA platform used for automation. The Control Server User Guide describes how EasyRPA Control Server operates.

In this section, you will learn how to work within the following EasyRPA Control Server modules:

How to Get Context Help

To view the Control Server User Guide for the EasyRPA Control Server, you need to:

1. Navigate to the start page.
2. Click **Find Out More**.



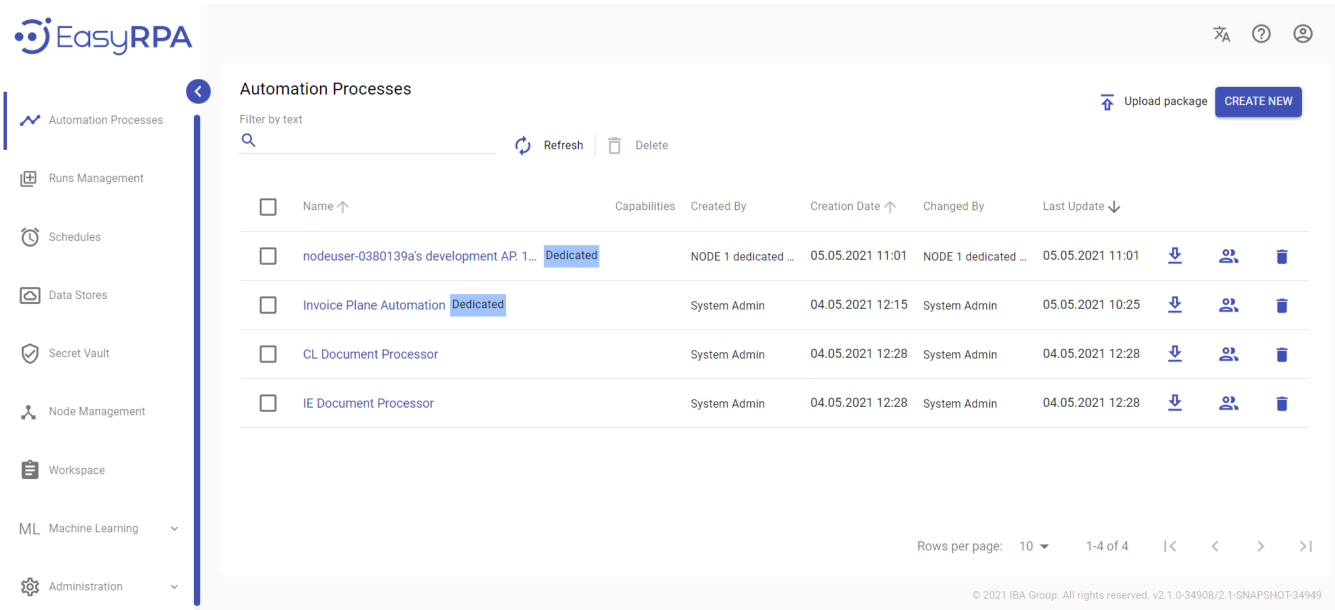
You can also click the F1 button, to see the context help for the current page.

(v. 2.2) Automation Processes

- Create a new Automation Process
- Edit Automation Process
- Upload Automation Process Package

The Automation Processes module displays a catalog of automation processes defined by the system and ready to run.

There are several sample automation processes supplied with the EasyRPA Control Server, such as Debtor Analysis, Invoice Plane Automation, etc. You can refer to the RPA Samples Library for more details on how to set up the automation processes samples.



To access the Automation Processes module, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.

Manage existing Automation Processes

The EasyRPA control server allows managing the automation processes catalog.

Columns Description

- Name - the automation process name.
- Capabilities - the list of capabilities required for the automation process execution.
- Created By - the name of the user, who created the automation process.
- Creation Date - the date and time of the automation process creation.
- Changed by - the name of the user, who changed the automation process details.
- Last Update - the last date and time when the automation process was changed.

Filter by text

Filtering allows you to search the automation process by its name and author (columns Name, Created By respectively).

Sorting

Ascending/descending sorting is allowed by the columns: Name, Creation Date, Last Update.

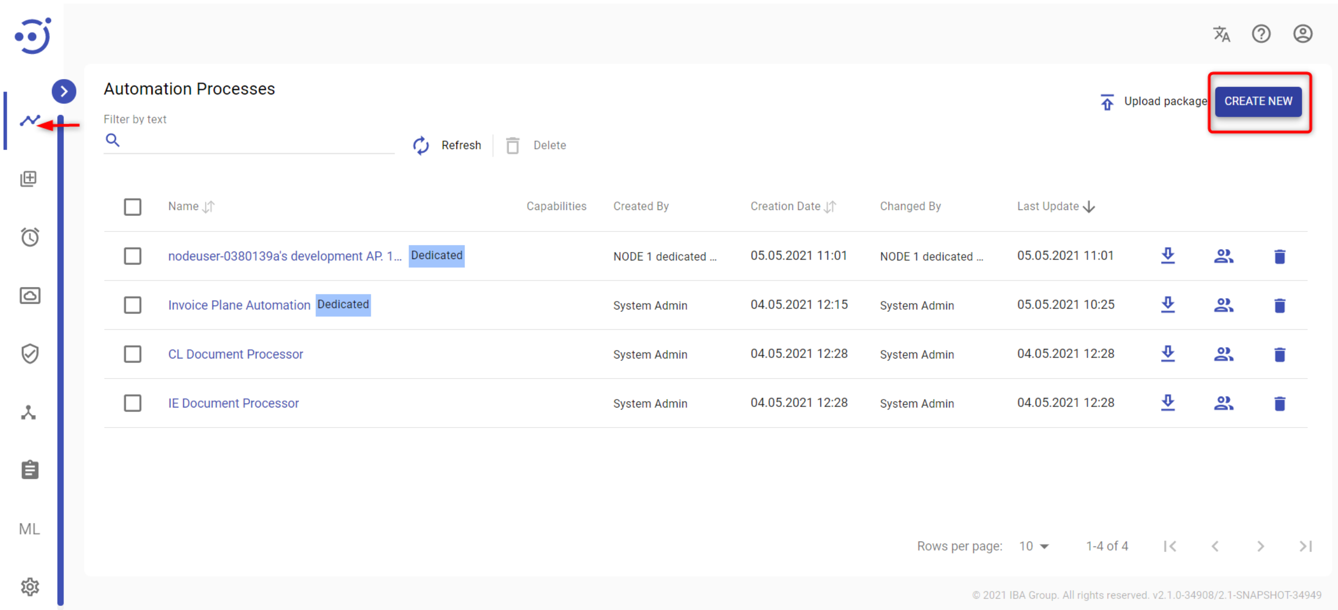
Control Icons

- **Download** - to download the JSON file containing the automation process details, configuration parameters, and input data. Required Permission: AutomationProcess-READ. A full automation process package cannot be downloaded from Control Server directly but can be provided by the support team upon request.
- **Delete** - to delete the automation process. Required Permission: AutomationProcess-DELETE.

Create a new Automation Process

To create a new Automation Process, you need to:

- Navigate to the **Automation Processes** module.
- Click **Create New.**



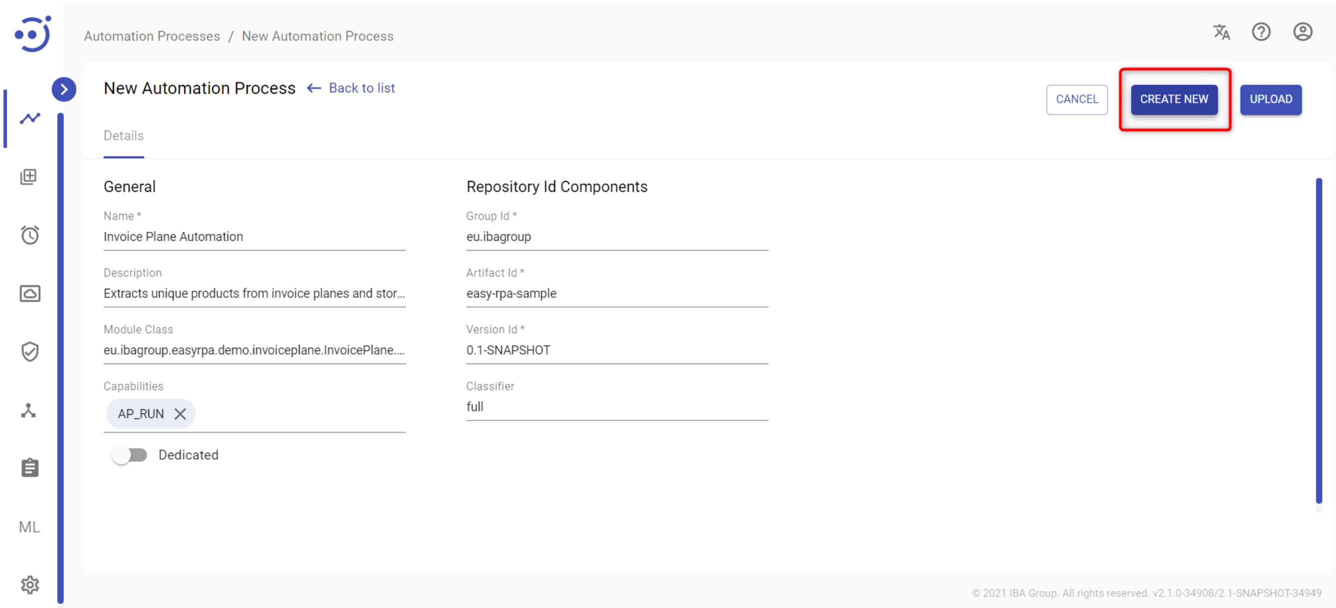
- Fill in **General** automation process details:
  - a unique **name** to distinguish the automation process (required).
  - a short **description** of the automation process functionalities (optional).
  - a name of the **module class** for execution (optional).

⚠ It is important to indicate module class if there are several in the package. Otherwise, the system will execute the first found module class from the package.

  - **capabilities** - capability labels required for the automation process execution. You can choose available capabilities in the dropdown (optional).
  - or **dedicated nodes** where the dedicated automation process is ready to run (available if the Dedicated toggle is on).
  - switch the **Dedicated** toggle button, if the automation process is dedicated. See Dedicated Automation Process.

- Fill in the **Repository Id Components**:
  - Group Id (required, *example: eu.ibagroup*);
  - Artifact Id (required, *example: easy-rpa-sample*);
  - Version Id (required, *example: 0.1-SNAPSHOT*);
  - Classifier - a unique identifier that reflects the type of resource being loaded (optional).

You can find the necessary module class and repository id values for all the available samples in the corresponding section. See RPA Samples Library.



- Click **Create New**.

If there are capabilities required to start the automation process they are displayed for each task.

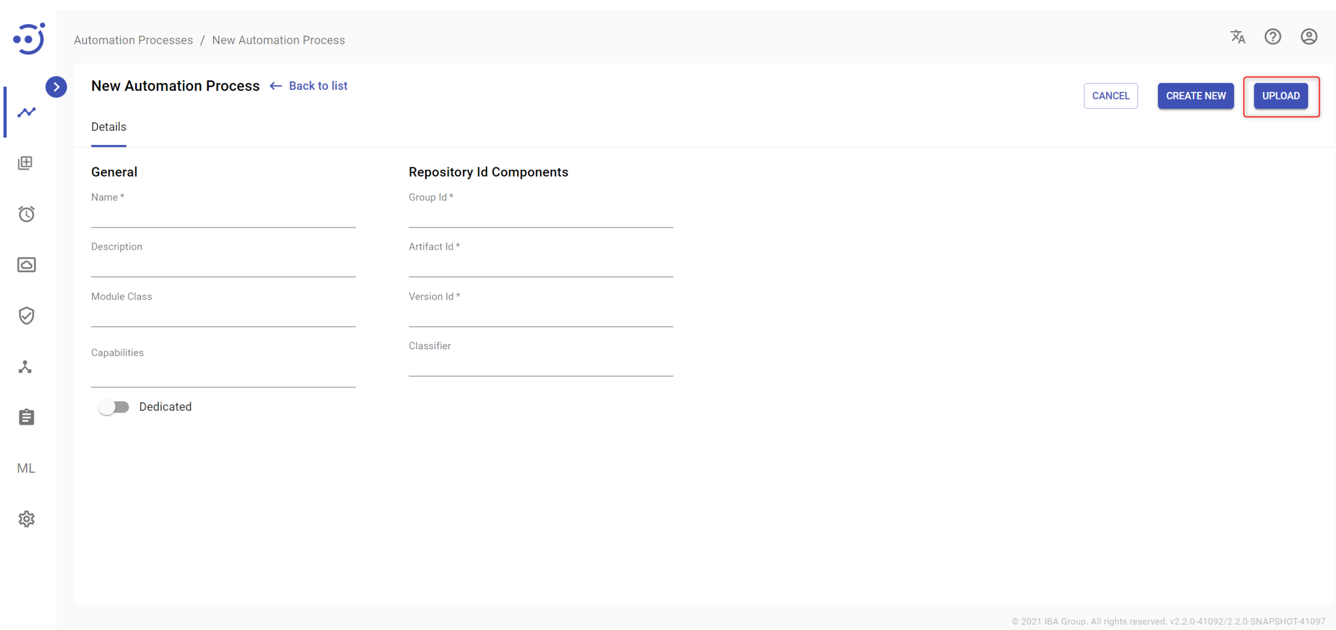
To create a new automation process, you need to be granted AutomationProcess-CREATE permission. See (v. 2.2) Role Permissions.

Upload Automation Process via JSON File

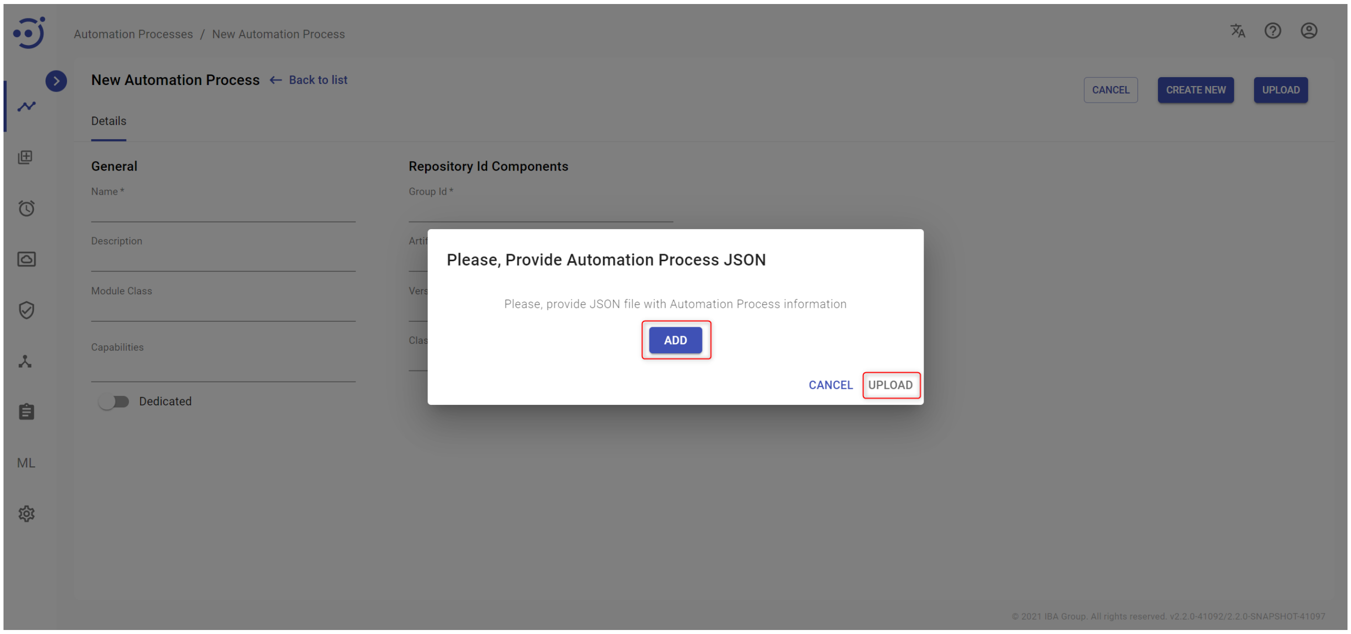
The other way to create the automation process is to **Upload File** with an automation process configuration in JSON format.

To upload a new Automation Process JSON file, you need to:

- Click **Upload**.



- Click **Add** and choose the JSON configuration file from the file system.
- Click **Upload**.



JSON file example:

AP Invoice Plane Automation Demo 14.03.2021 23_34.json


```json
{
  "name" : "Invoice Plane Automation Demo",
  "repositoryId" :
  "eu.ibagroup.samples.ap:easy-rpa-invoiceplane-ap:jar:2.0-SNAPSHOT",
  "moduleClass" :
  "eu.ibagroup.easyrpa.ap.productsreader.ProductsReaderAp",
  "dedicated" : false,
  "capabilities" : [ "NODE4" ],
  "dedicatedNodes" : [ ],
  "params" : [ {
    "key" : "key value",
    "value" : "value1"
  }, {
    "key" : "invoiceplane.client.url",
    "value" : "[illegible]/invoiceplane"
  } ],
  "input" : {
    "variables" : { },
    "_id" : "5123dab1-4c23-43a1-a73d-44875df9cc39"
  }
}
```


To upload an automation process, you need to be granted AutomationProcess-CREATE permission. See (v. 2.2) Role Permissions.

Edit Automation Process

Key information about a particular automation process is available at the pop-up panel at the right by clicking on the corresponding row with the automation process.

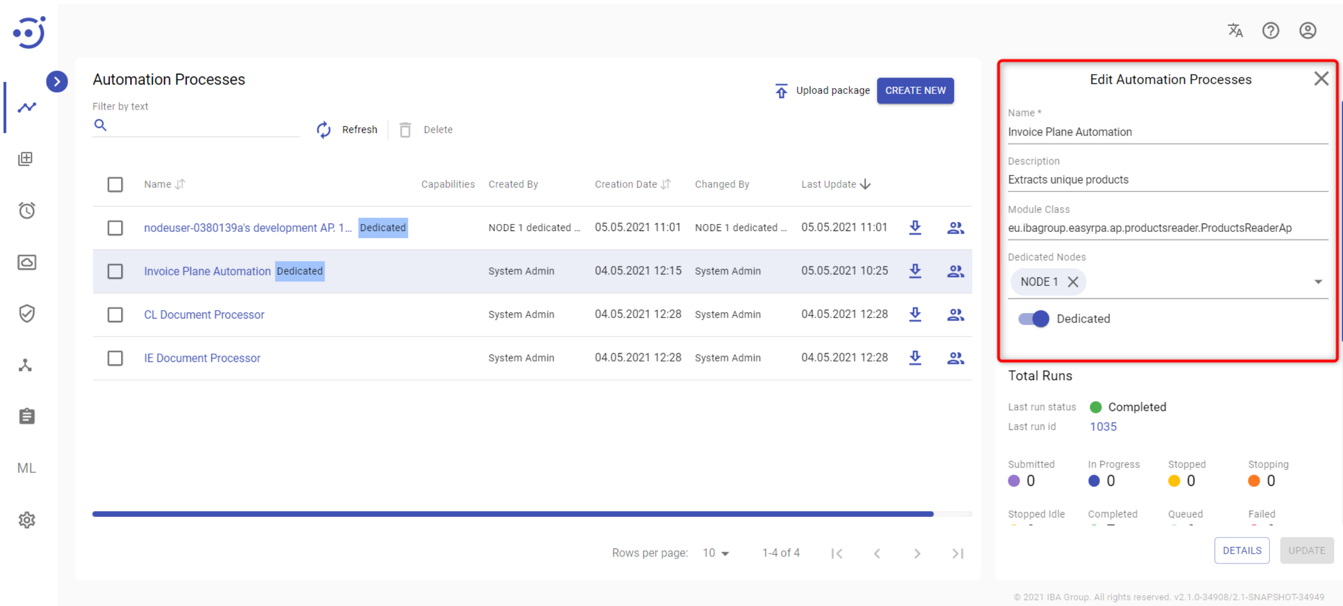
You can edit the displayed fields and save the result by clicking the **Update** button. Required Permission: AutomationProcess-UPDATE. See (v. 2.2) Role Permissions.

The pop-up panel contains the following information:

- Name - the automation process name.
- Description - a short description of the automation process functionalities.
- Module Class - the name of the module class for execution (*name example: eu.ibagroup.easyrpa.demo.debtors. DebtorsAnalysisFullDemoAp*)

⚠ It is important to indicate module class if there are several in the package. Otherwise, the system will execute the first found module class from the package.

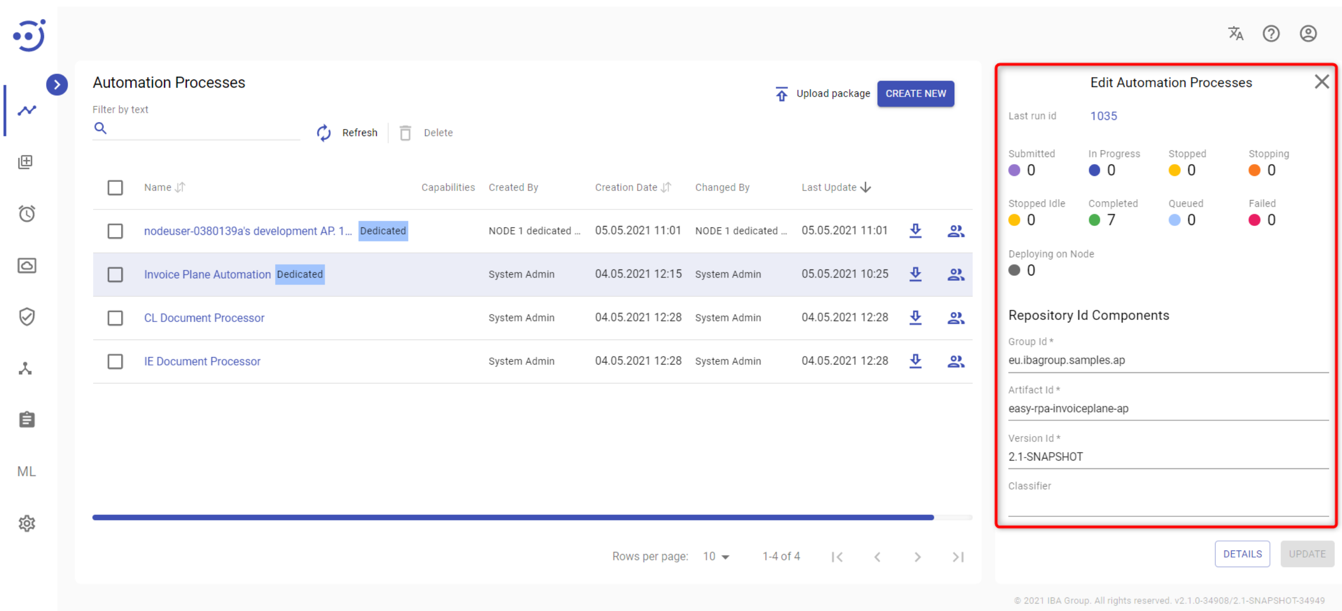
- Capabilities - the list of capability labels required for the automation process execution. You can choose available capabilities in the dropdown (the field is availble only for APs with defined capabilities).
- Dedicated Nodes (available if the Dedicated toggle is on) - the list of dedicated nodes where the dedicated automation process is ready to run.
- Dedicated - the toggle allows you to make the automation process dedicated. See Dedicated Automation Process.



- Total Runs - the quantity of the automation process runs and their statuses. See Automation Process Run Status Lifecycle.

If the automation process was launched once, the "Last run status" is displayed - the status and the index number of the last process run. Clicking the index number of the process will lead to the last process Run page. See (v. 2.2) Automation Process Run.

- Repository Id Components - maven artifact identifier consists of the following IDs:
  - Group Id (example: eu.ibagroup);
  - Artifact Id (example: easy-rpa-sample);
  - Version Id (example: 0.1-SNAPSHOT);
  - Classifier - a unique identifier that reflects the type of resource being loaded.



⚠️ You can find the necessary module class and repository id values for all the available samples in the corresponding section. See **RPA Samples Library**.

For more information about the automation process - click **Details**. Required Permission: AutomationProcess-READ.

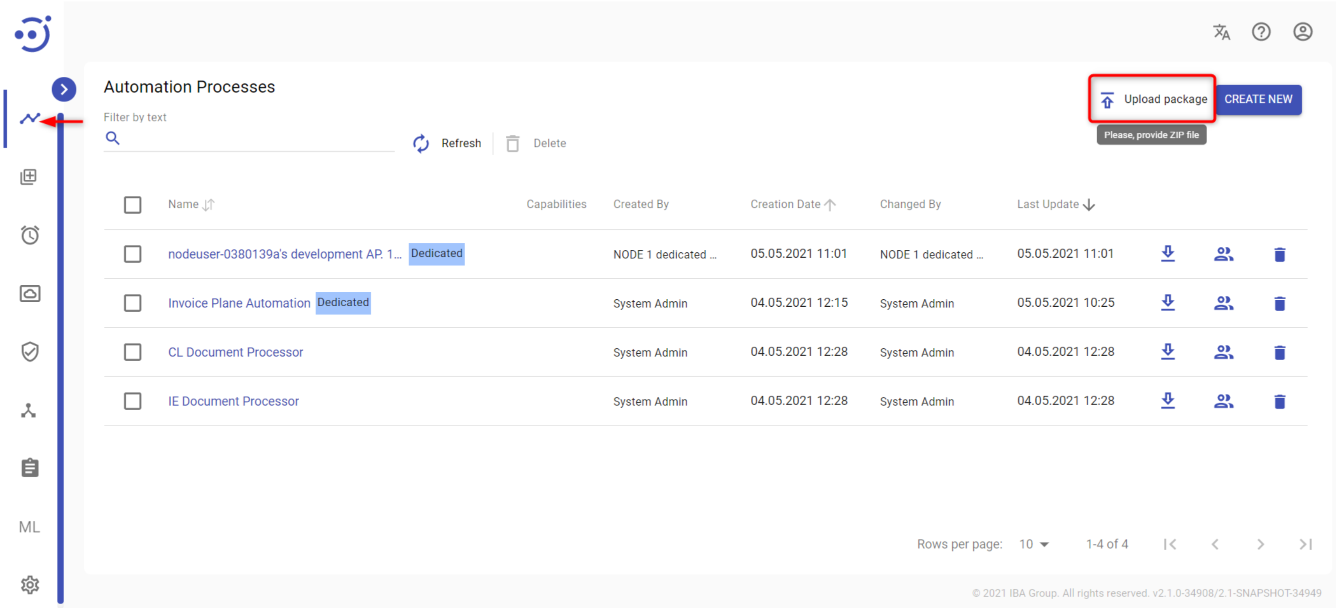
Upload Automation Process Package

The EasyRPA allows to upload a package with all the necessary modules for an automation process:

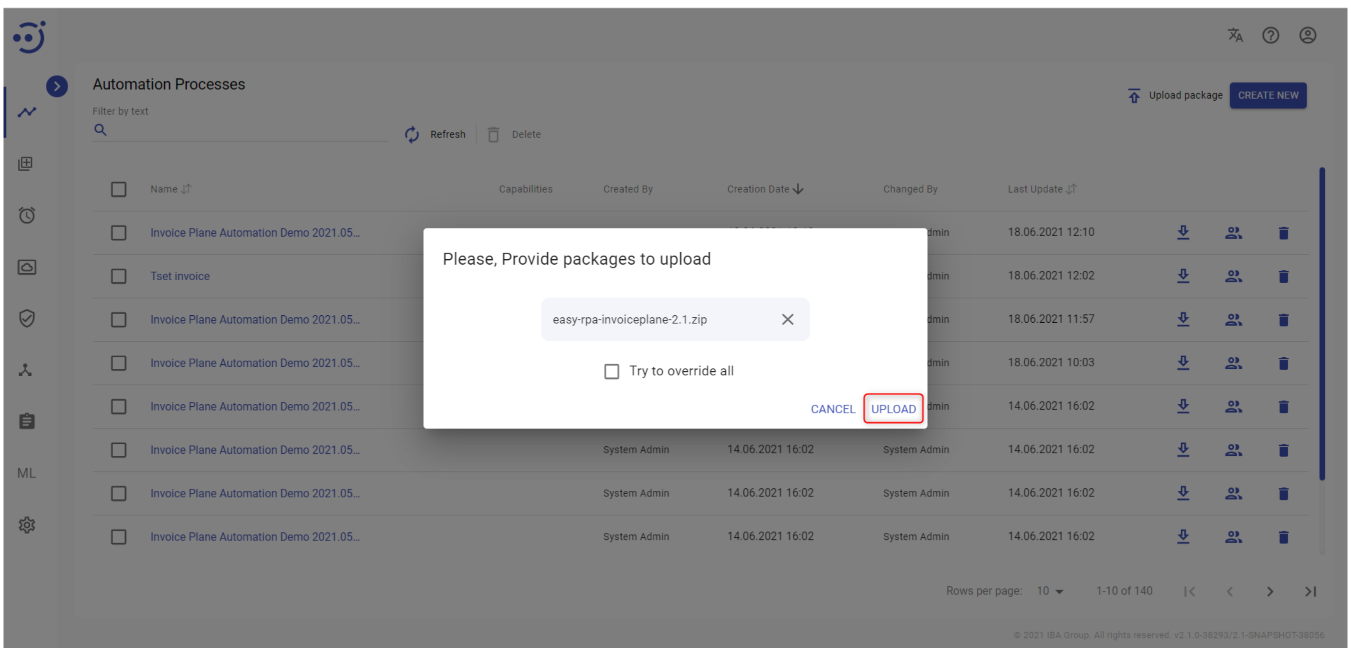
- Automation process .jar file
- Automation process .json definition
- Secret vault .json file
- Automation process input
- Automation process configuration parameters
- Data stores
- Notification templates definitions as .json files
- Notification templates as .txt files

To upload a package, you need to:

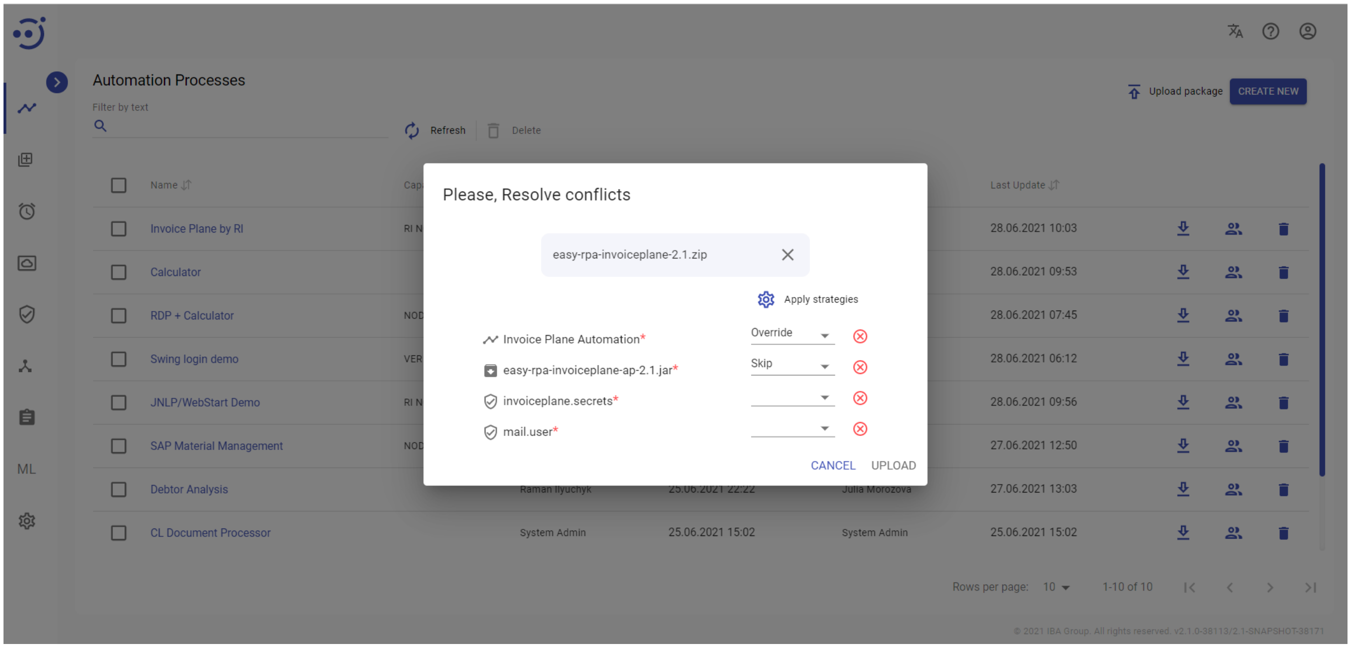
- Navigate to the **Automation Processes** module.
- Click the **Upload package** icon.



- Provide a valid .zip file with a package. To apply override to the whole package check **Try to override all**.

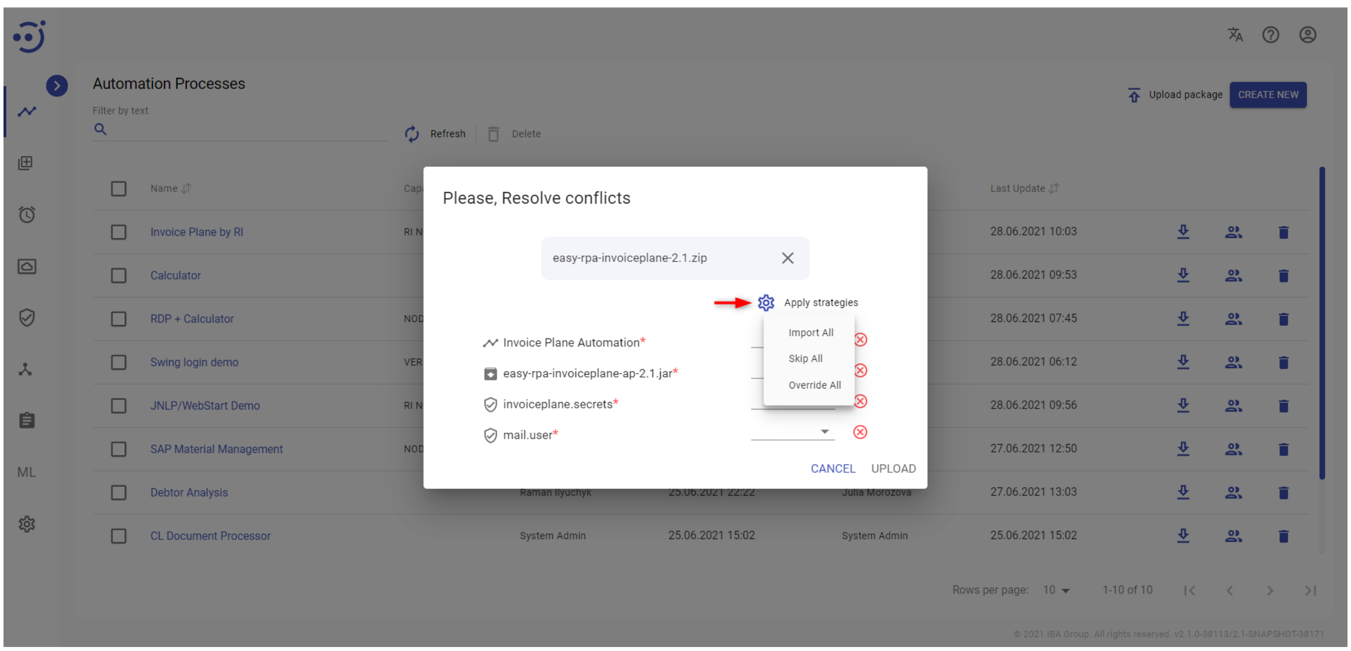


- Click **Upload.**
- In case of conflicts: resolve it using options Override or Skip.



- To select the option (Import All, Skip All, Override All) for all items click on **Apply strategies.**

⚠️ If the selected option is is not present in the item, therefore, it doesn't apply.



- Click **Upload.**

To upload a package, you need to be granted AutomationProcess-CREATE permission. See Role Permissions .

(v. 2.2) Automation Process Details

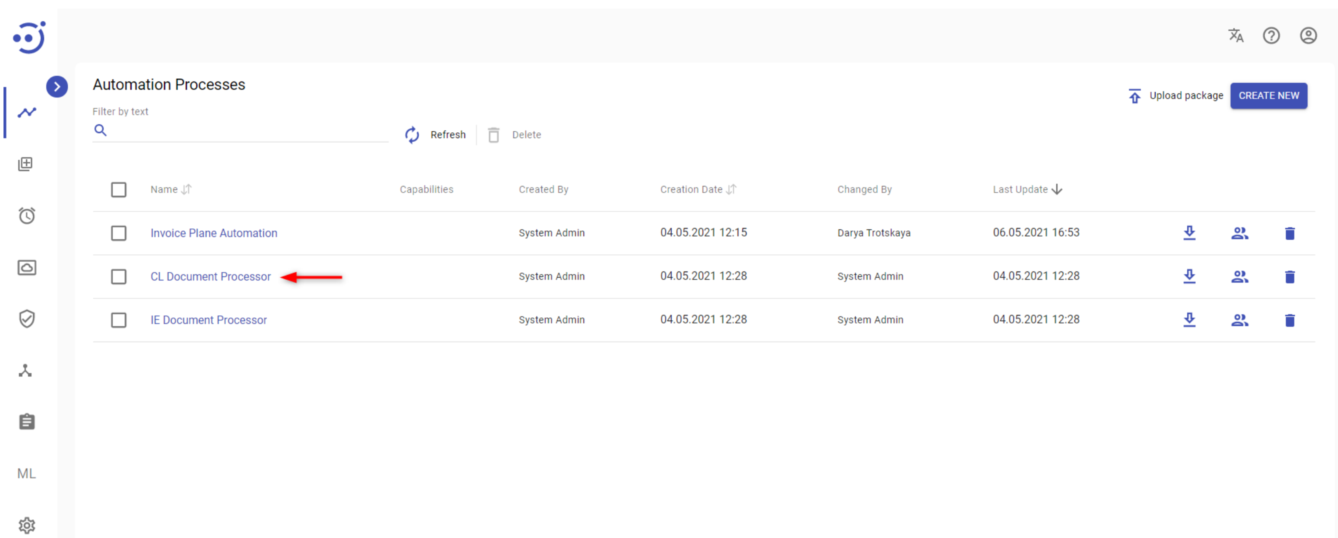
The Automation Process Details page contains general automation process details, executed automation process runs, and configuration parameters. You can view/edit automation process details, configuration parameters, and manage automation process runs. To access the Automation Processes Details, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.

Details

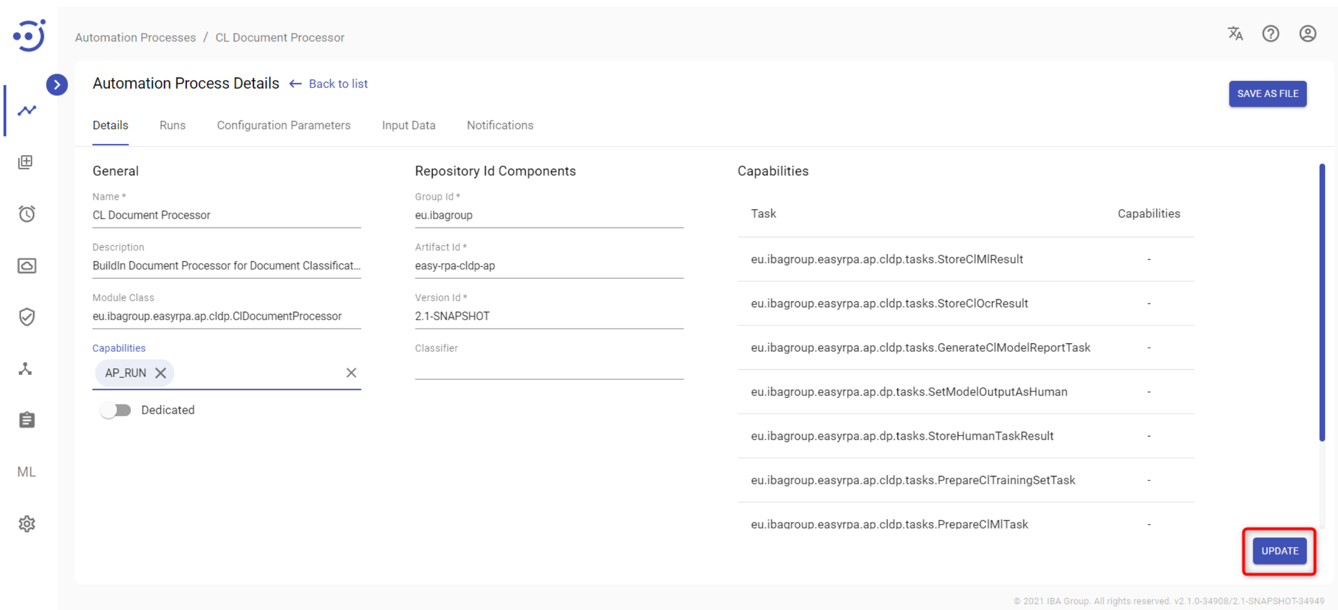
The Details tab displays general settings, that are necessary for the automation process creation and launch.

To view/edit automation process details, you need to:

- Navigate to the **Automation Processes** module.
- Click on the corresponding Automation Process Name.



- Navigate to **Details** tab
- Change one of the field values.



- Click **Update**.

To update the Automation Process Details, you need to be granted AutomationProcess-UPDATE permission. See (v. 2.2) Role Permissions.

Control icons

- **Save as file** - to download the JSON file containing the automation process details, configuration parameters, and input data. Required Permission: AutomationProcess-READ.

Fields Description

General:

- Name - the automation process name.
- Description (optional) - a short description of the automation process functionalities.
- Module Class (optional) - the name of the module class for execution.
- Capabilities (optional) - capability tags required for the automation process execution. It is possible to choose available capabilities in the dropdown.

Repository Id Components:

- Group Id
- Artifact Id
- Version Id
- Classifier - a unique identifier that reflects the type of resource being loaded.

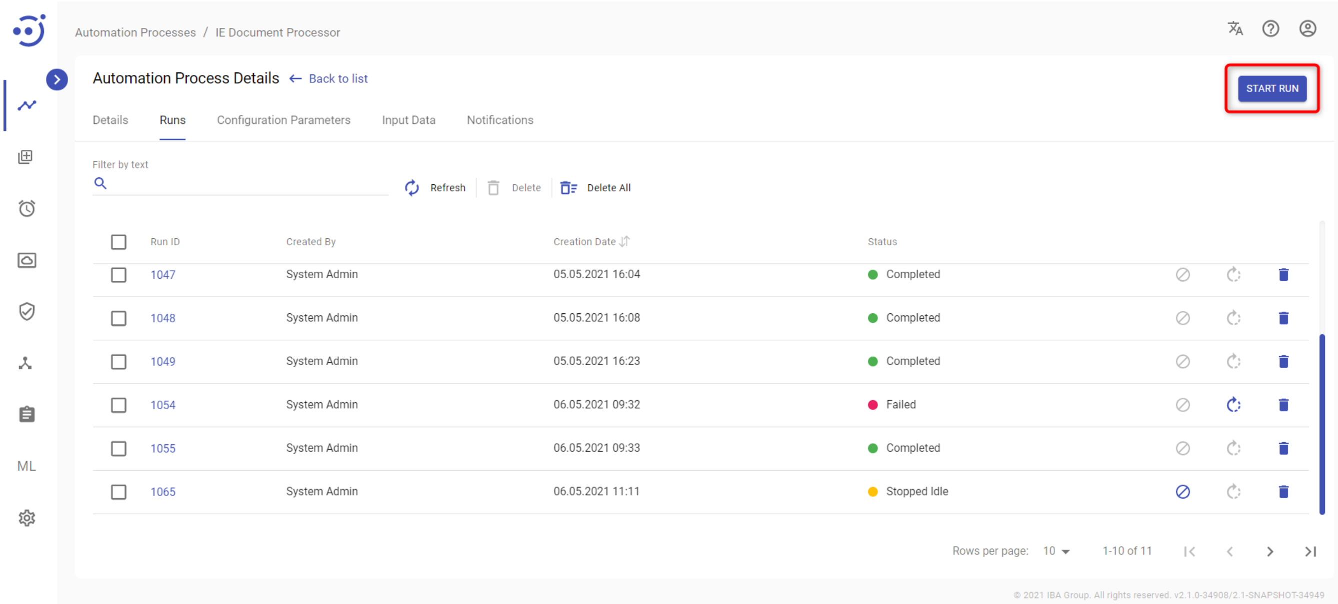
Capabilities:

A list of system capabilities for the automation process tasks is automatically displayed on the right-hand side of the Automation Process Details tab.

Runs

The Runs tab contains information about all runs of a particular automation process and their statuses. You can manage the automation process runs using control buttons. To access the Automation Processes Runs, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.

To launch the automation process run, you need to click the **Start Run** button. Required permission: AutomationProcess-ACTION.



Columns Description

- Run ID - numeric identifier of the particular process run.
- Created By - the automation process author name.
- Creation Date - the date and time when the process was created.
- Status - the current status of the automation process run.

Control icons

- Stop - to stop the automation process run. Required Permission: AutomationProcess-ACTION.
- Retry - to repair the automation process run. Required Permission: AutomationProcess-ACTION.
- Delete - to delete the automation process run. Required Permission: AutomationProcess-UPDATE.

Filter by text

Filtering allows you to search the automation process by Run ID, author (Created By column) or status.

Sorting

Ascending/descending sorting is allowed for the Creation Date column.

Related pages

Clicking on the Run ID value will lead to the "Run" page of the selected automation process run. See (v. 2.2) Automation Process Run for more information.

Configuration Parameters

The Configuration Parameters tab displays the list of automation process parameters in the form of key-value pairs.

To access the Configuration Parameters, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.

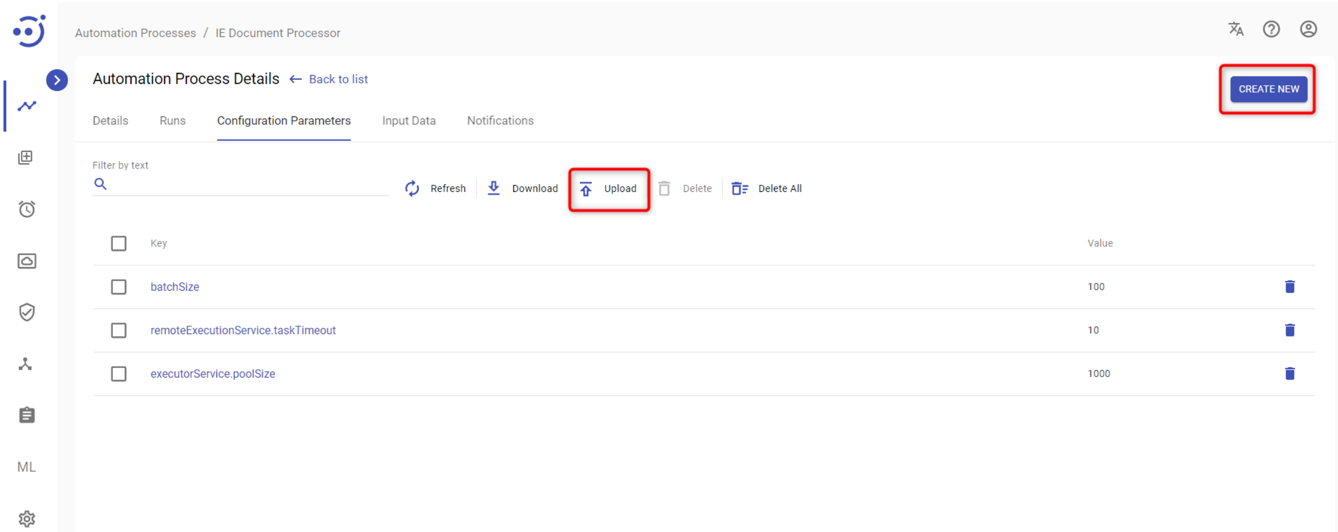
⚠️ If the same parameter with a different value is present in the CS Configuration and the Node Configuration Parameters modules, the priority is assigned in the following order: Node Configuration Parameter -> Automation Process Configuration Parameter -> CS Configuration Parameter.

Add Configuration Parameter

There are 2 ways to **Add** a new configuration parameter:

- Click **Create New** and add configuration parameter manually. Required Permission: AutomationProcess-UPDATE

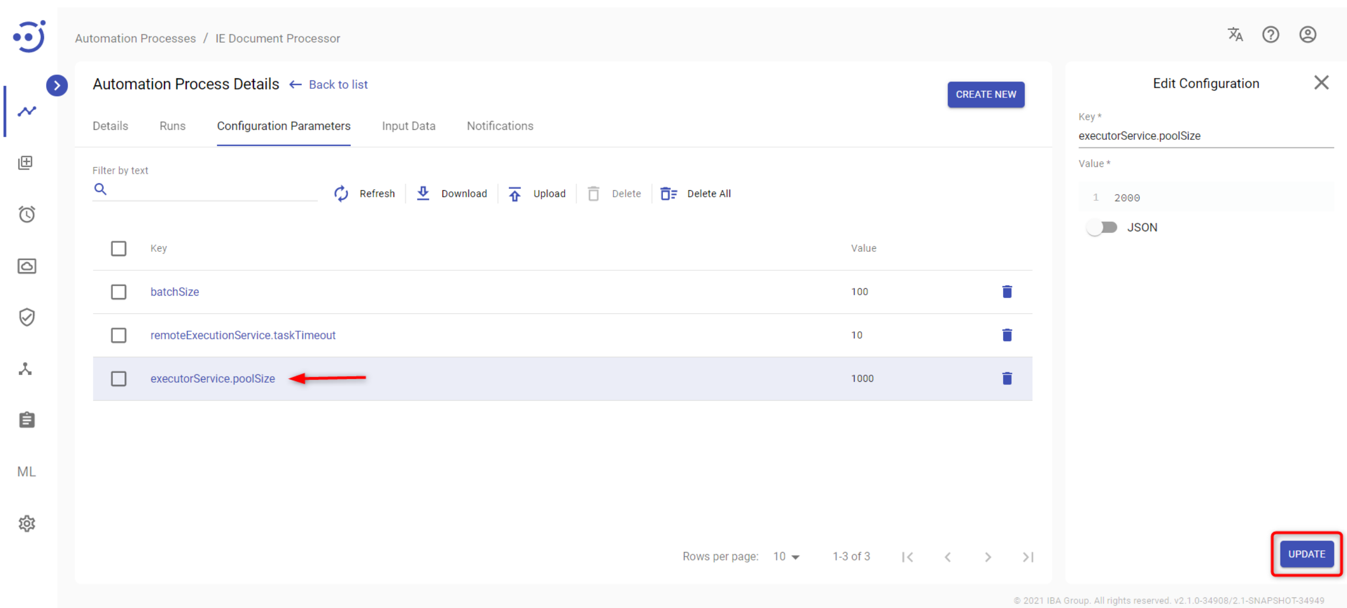
- Click the **Upload** icon and import the CSV file. Required Permission: AutomationProcess-UPDATE.



Update Configuration Parameter

To **Update** an existing configuration parameter, you need to:

- Click on the corresponding configuration parameter.
- Change one of the field values.



- Click **Update**.

To update the Automation Process Configuration Parameters, you need to be granted AutomationProcess-UPDATE permission. See (v. 2.2) Role Permissions.

Control icons

- **Download** - to download existing configuration parameters in CSV file. Required permission: AutomationProcess-READ.
- **Delete** - to delete the configuration parameter. Required Permission: AutomationProcess-UPDATE.
- **Delete all** - to delete all configuration parameters of this automation process. Required Permission: AutomationProcess-UPDATE.

Filter by text

Filtering allows you to search the configuration parameter by Key, Value columns.

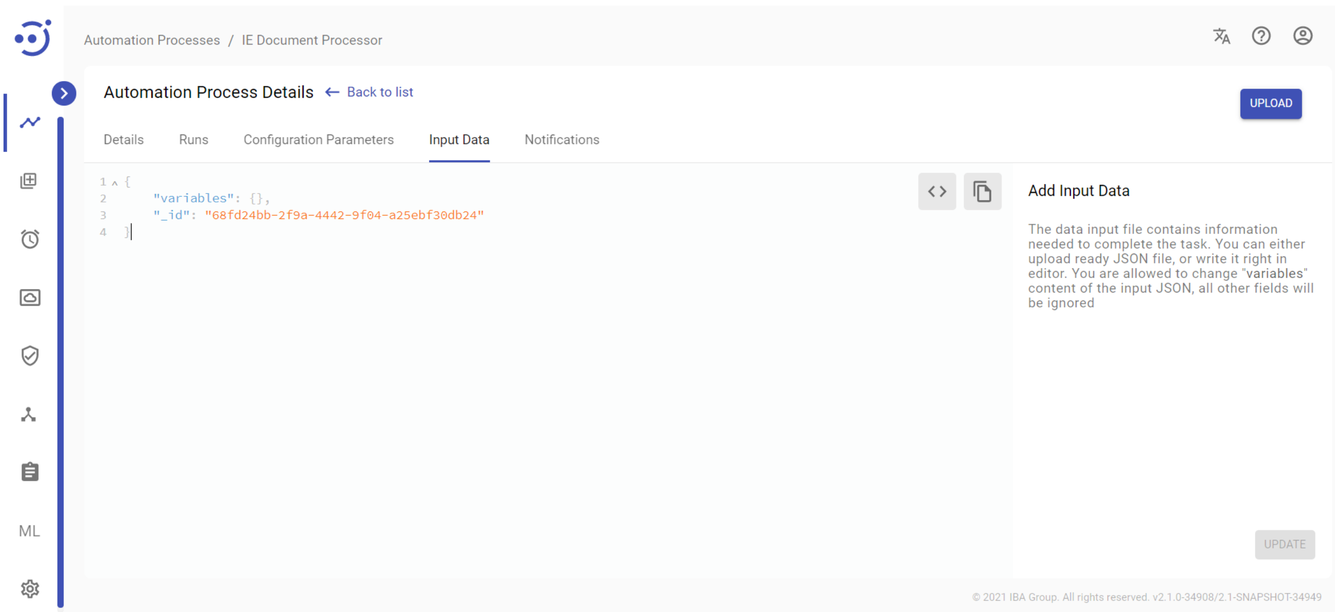
Configuration parameters example

key	value
acc.client.url	http://by.demo.1c.eu/accounting/en/
court.judgments.court	Экономический суд г. Минска
sap.path	C:/Program Files (x86)/SAP/FrontEnd/SAPgui/saplogon.exe
WINDOWS_APPLICATION_DRIVER_URL	http://localhost:4723

Input Data

The Input Data tab contains the input data configuration in JSON format. To access the Input Data, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.

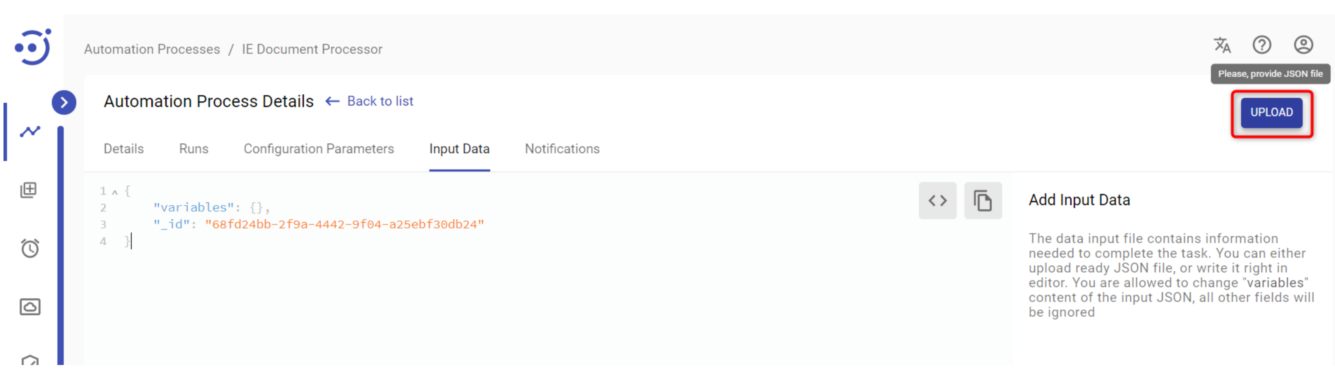
By default the input data looks as follows:



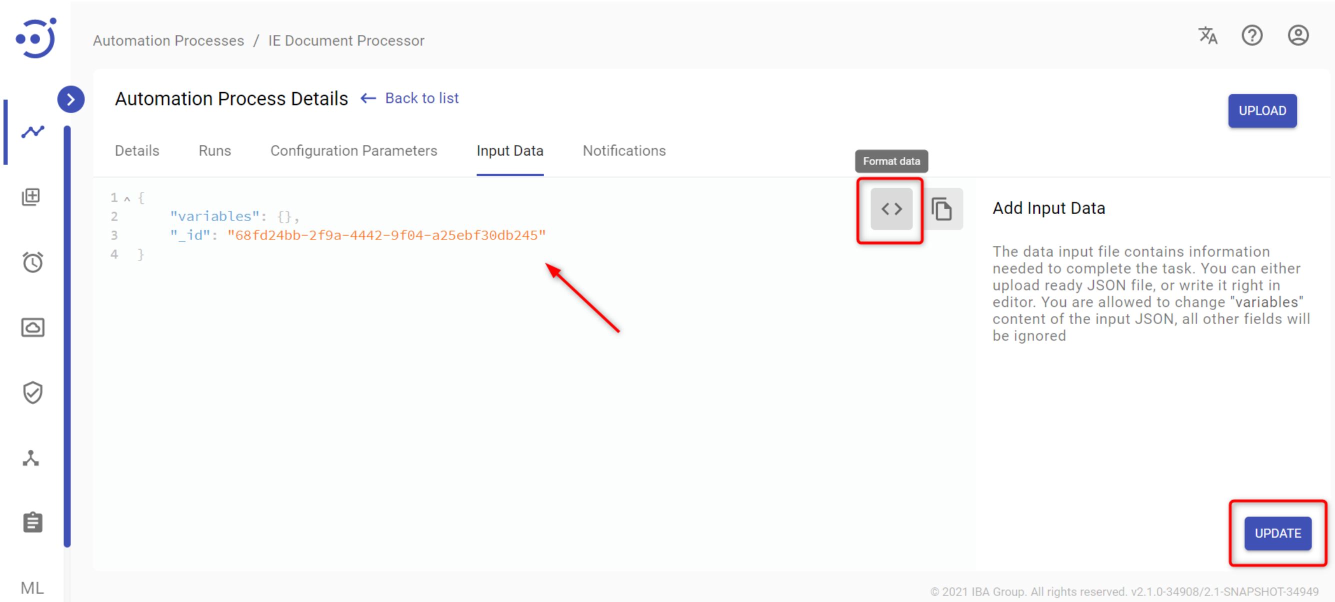
Update Input Data

There 2 ways to **Update** the default input data:

- **Upload** File in JSON format.



- Write JSON manually in the editor. Click Format Data icon to bring it to JSON format. Click Update.



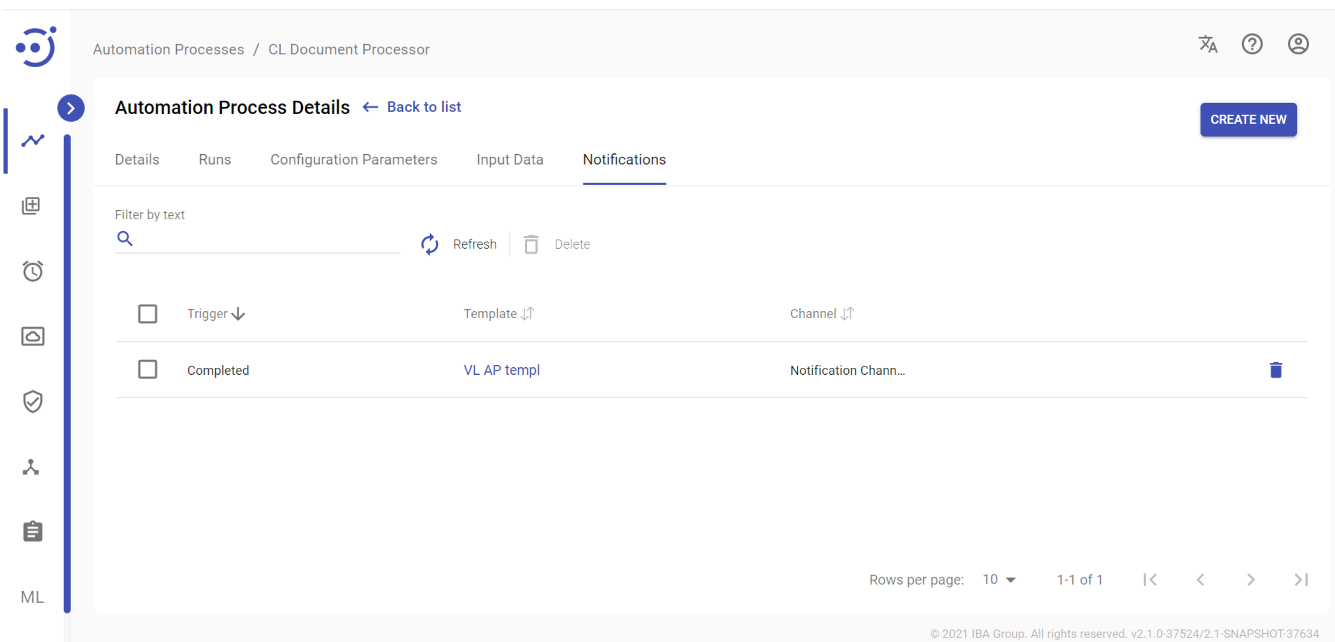
To update the Input Data, you need to be granted AutomationProcess-UPDATE permission. See (v. 2.2) Role Permissions.

Control icons

- Format Data - to bring it to JSON format.
- Copy - to copy input data to the clipboard.

Notifications

The Notifications tab allows users to receive messages about a particular AP Run. To access the Notifications, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.



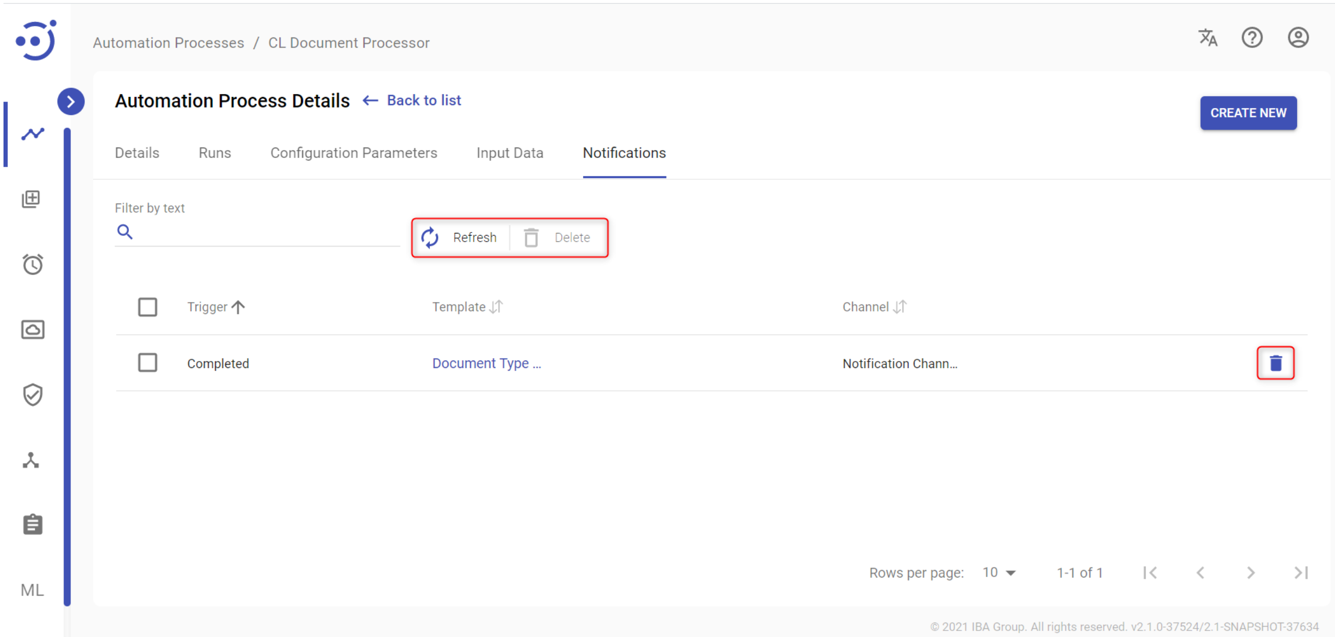
Columns Description

- Trigger - the action for which the message is sent to the particular channel.
- Template - example of a message is sent to a channel.
- Channel - mailing list of contacts.

Control icons

- **Refresh** - to refresh the page.
- **Delete** - to delete Notifications.

Required Permission: AutomationProcess-UPDATE.



Filter by text

Filtering allows you to search the automation process by **Trigger, Template and Channel**.

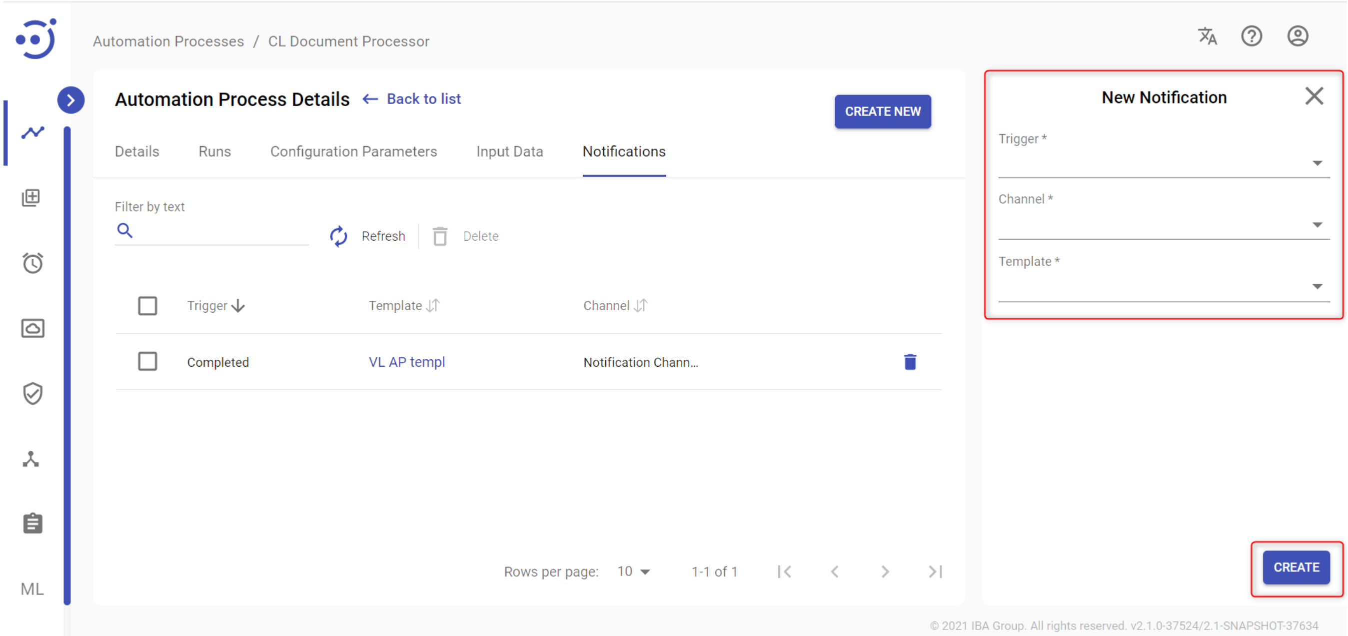
Sorting

Ascending/descending sorting is allowed for the **Trigger, Template and Channel columns.**

Create a New Notification

To create a New Notification:

1. Click **"Create New"** button.
2. In the New Notification pop-up panel enter **Trigger, Chanel, Template.**
3. Click **CREATE.**

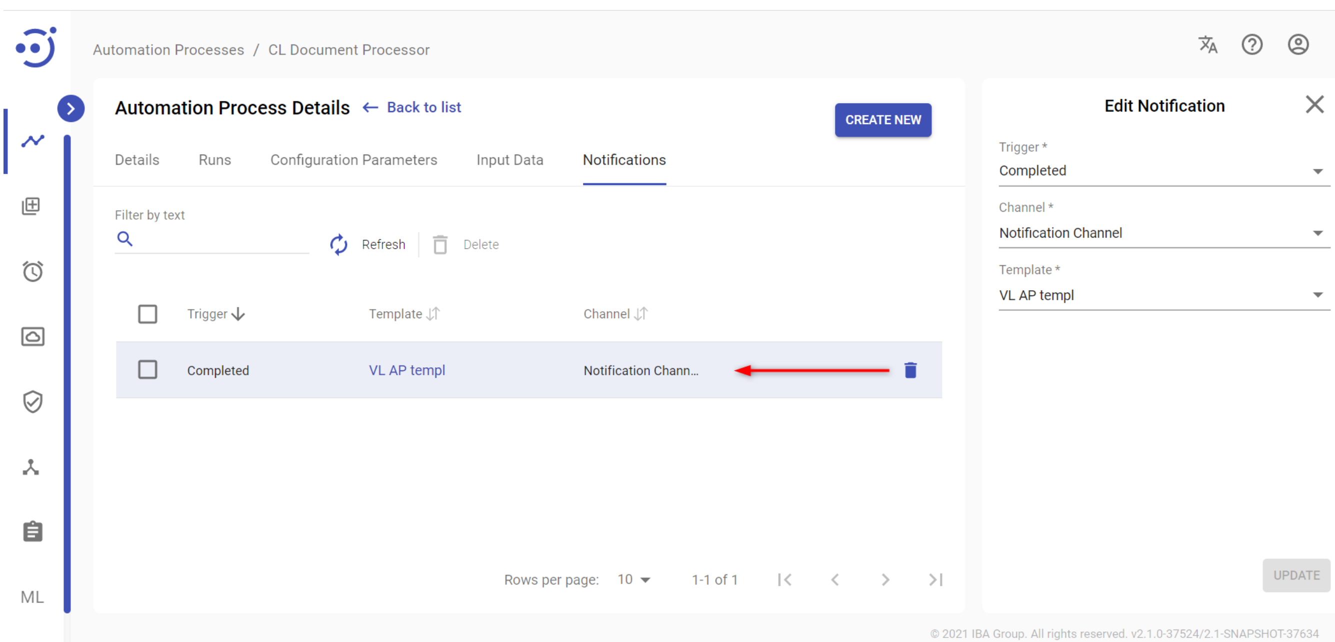


To create the Automation Process Notifications, you need to be granted AutomationProcess-UPDATE permission. See (v. 2.2) Role Permissions.

Update Notifications

To **Update** an existing notification parameters, you need to:

- Click on the corresponding notification.
- Change one of the field values.



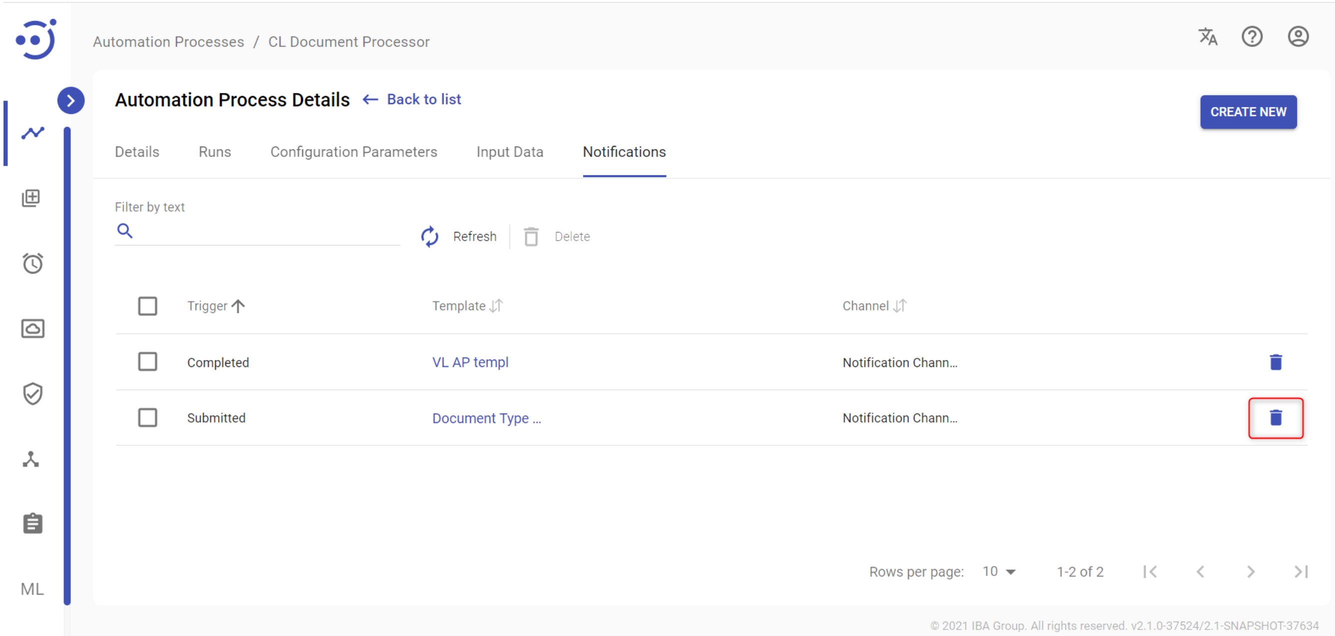
- Click **Update**.

To update the Automation Process Notifications, you need to be granted AutomationProcess-UPDATE permission, Channel-READ and Template-READ. See (v. 2.2) Role Permissions.

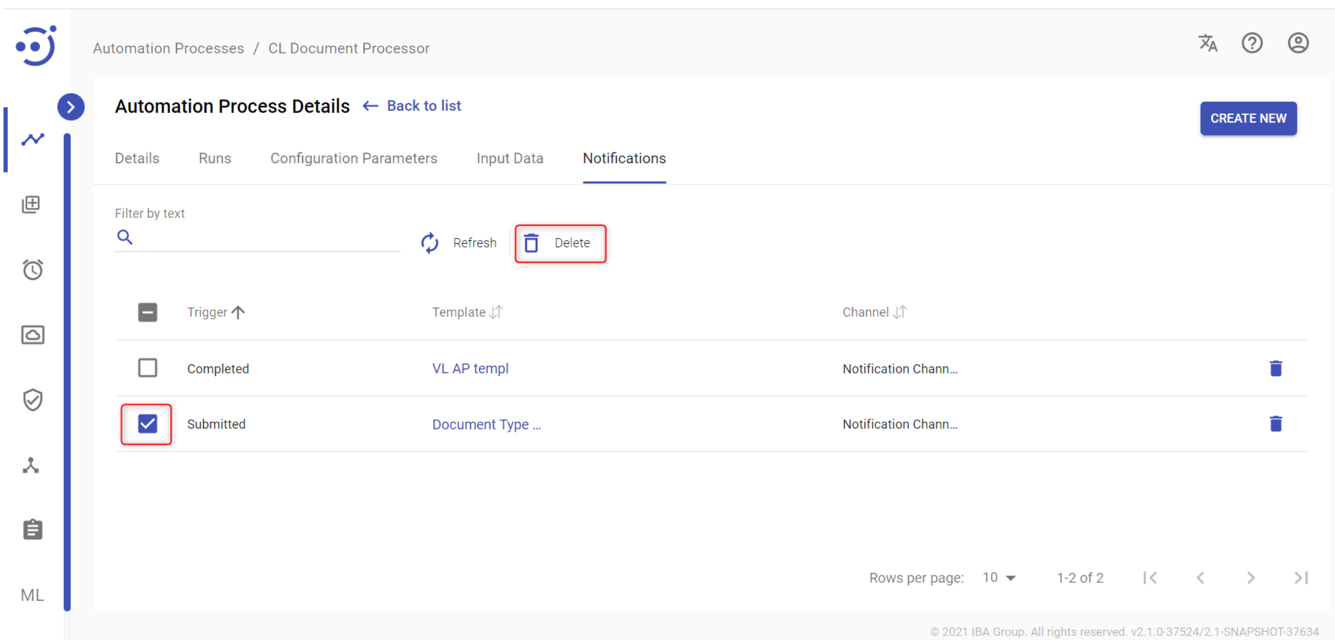
Delete Notifications

There 2 ways to **Delete** Notifications:

- **Press** control icon **Delete.**



- Choose the particular (or all) Notification and press icon **Delete.**



You need to be granted AutomationProcess-UPDATE permission. See (v. 2.2) Role Permissions.

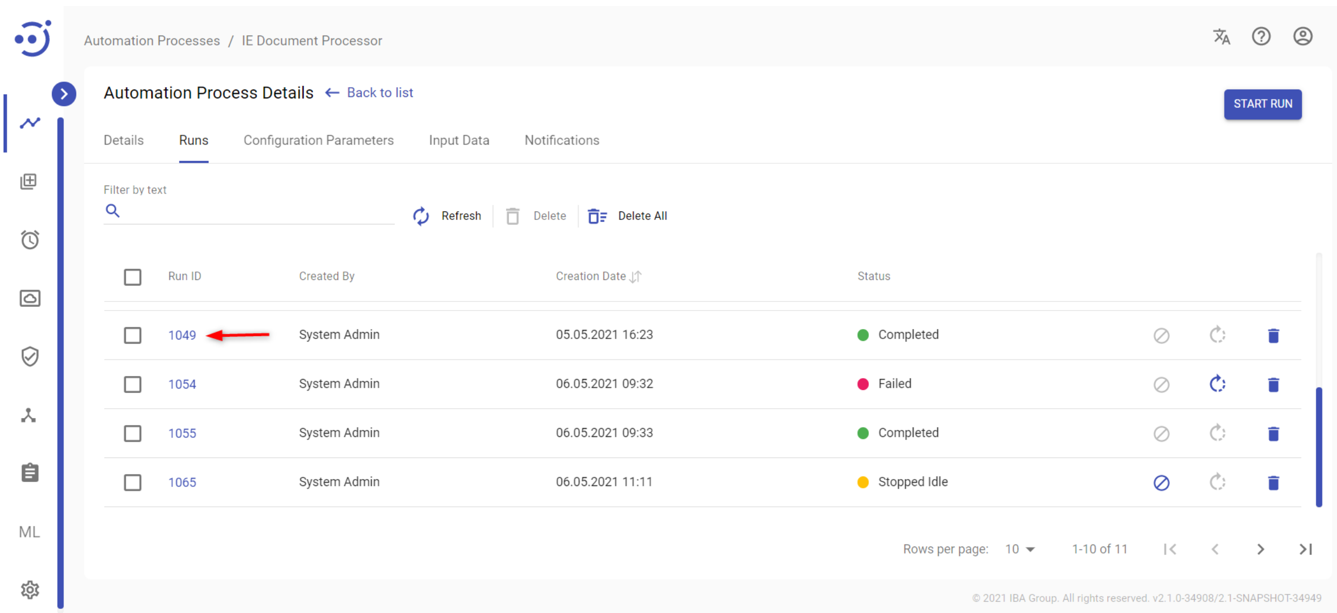
(v. 2.2) Automation Process Run

- History
- Event Log
- Automation Process Run Status Lifecycle

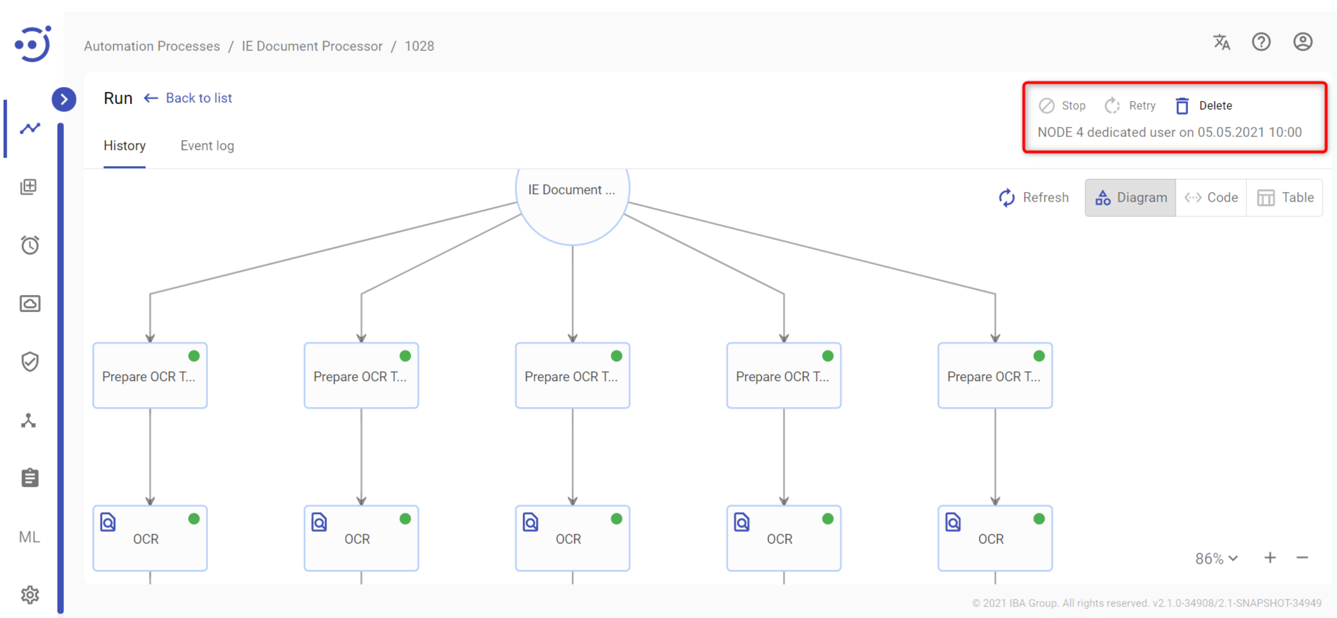
The Runs page contains detailed information about a particular automation process run, its history, and event log which help users to monitor particular process execution. To view the list of the automation process runs, you need to be granted AutomationProcess-READ permissions. See (v. 2.2) Role Permissions.

To navigate to the Run page, you need to:

- Navigate to the **Automation Processes** module.
- Click on the corresponding Automation Process Name.
- Click on the corresponding Automation Process Run ID. Required Permissions: AutomationProcess-READ.

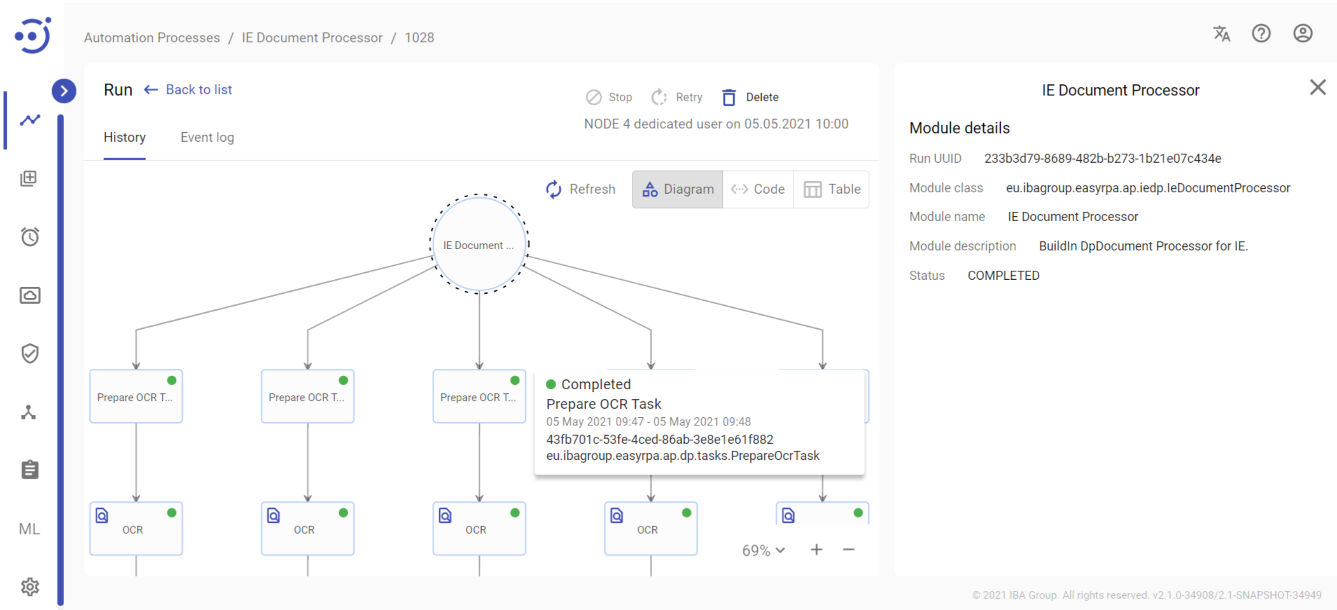


Each run has information about a user who started the Automation Process and start Date/Time and actions to Stop, Retry and Delete the automation process run (enabled for the corresponding Automation Process Run Status Lifecycle).



History

The History tab displays the automation process steps in either Diagram, Code or Table representation. To access the Automation Processes Run History, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.



Control icons

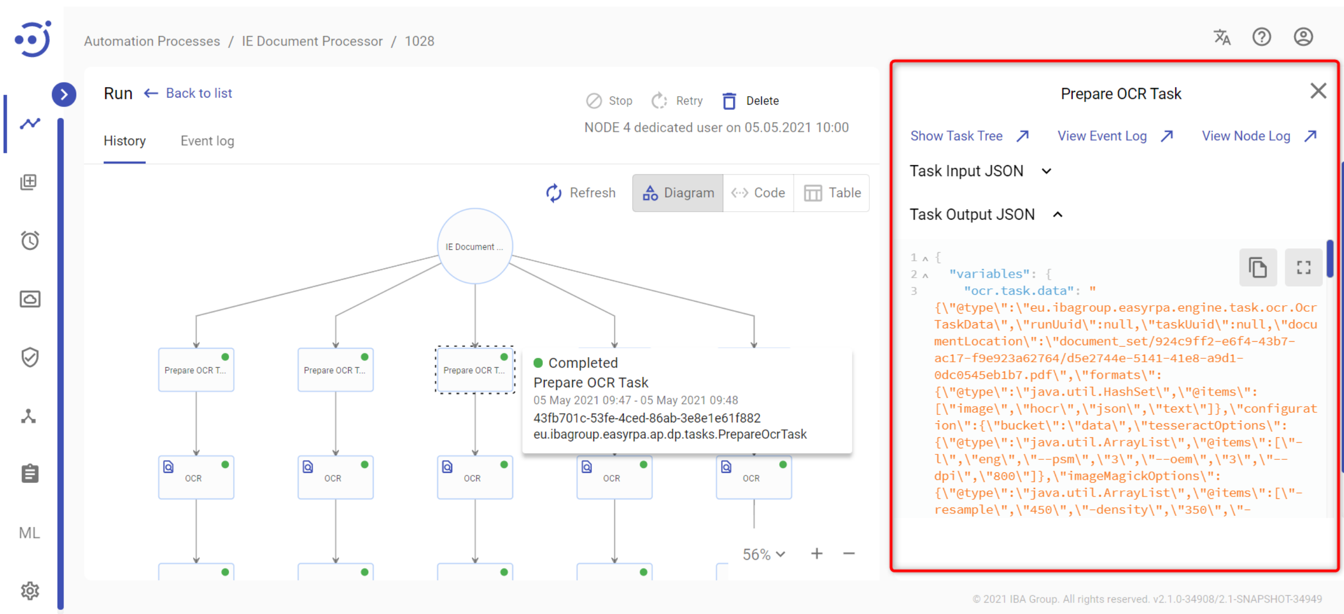
- **Stop** - to stop the automation process run. Required Permission: AutomationProcess-ACTION.
- **Retry** - to repair the automation process run. Required Permission: AutomationProcess-ACTION.
- **Delete** - to delete the automation process run. Required Permission: AutomationProcess-UPDATE.
- **Refresh** - to pull the last process run state from the server and see all the completed steps.
- **Diagram/Code/Table toggle** - to switch between Diagram, Code or Table representation.

Diagram

The first step describes the general information about the process run:

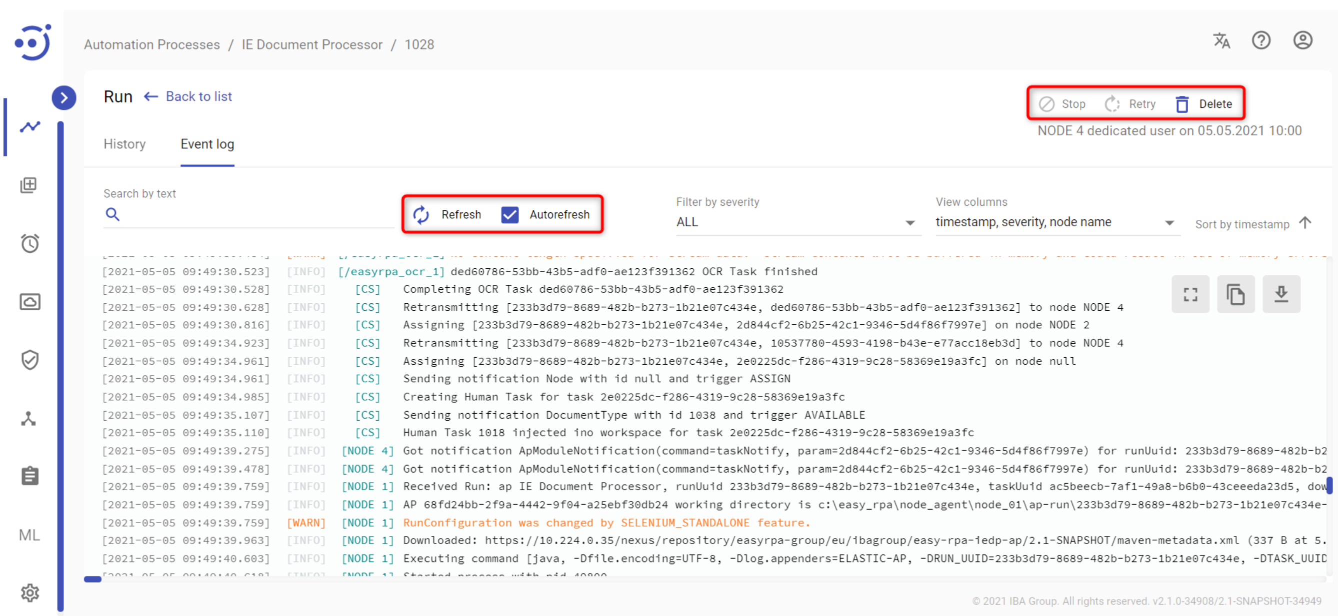
- Run uuid (*example: 683b293d-bf6b-44ab-9430-7de269bda187*)
- Module class (*example: eu.ibagroup.easyrpa.demo.debtors.DebtorsAnalysisFullDemoAp)*
- Module name *(example: Debtor analysis full demo)*
- Module description
- Status (*example: OK/ERROR*)

The subsequent steps describe every task executed by the bot with Input/Output for each step in JSON format. It is possible to copy data to clipboard or maximize for easy viewing.



Event Log

The Event Log tab displays the logs of the particular automation process run. To access the Automation Processes Run Event Log, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.



Control icons

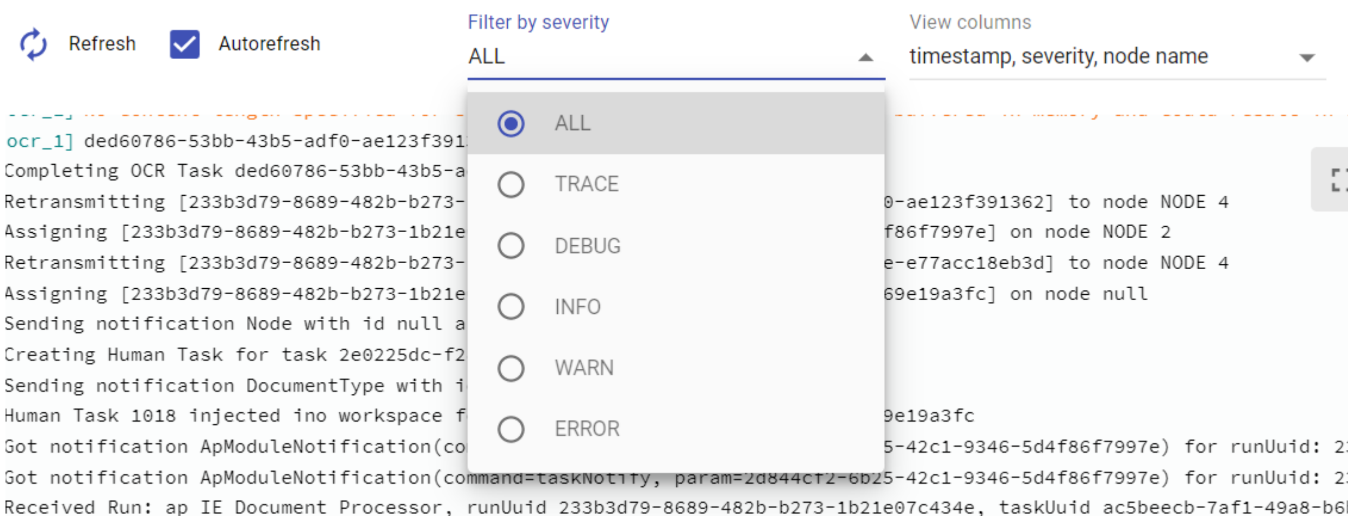
- **Stop** - to stop the automation process run. Required Permission: AutomationProcess-ACTION.
- **Retry** - to repair the automation process run. Required Permission: AutomationProcess-ACTION.
- **Delete** - to delete the automation process run. Required Permission: AutomationProcess-UPDATE.
- **Refresh** - to pull the latest logs from the server.
- **Autorefresh checkbox** - to turn on/off an automatic refresh of logs.

Search by text

You can search for a particular log by its text. The logs found are highlighted in yellow.

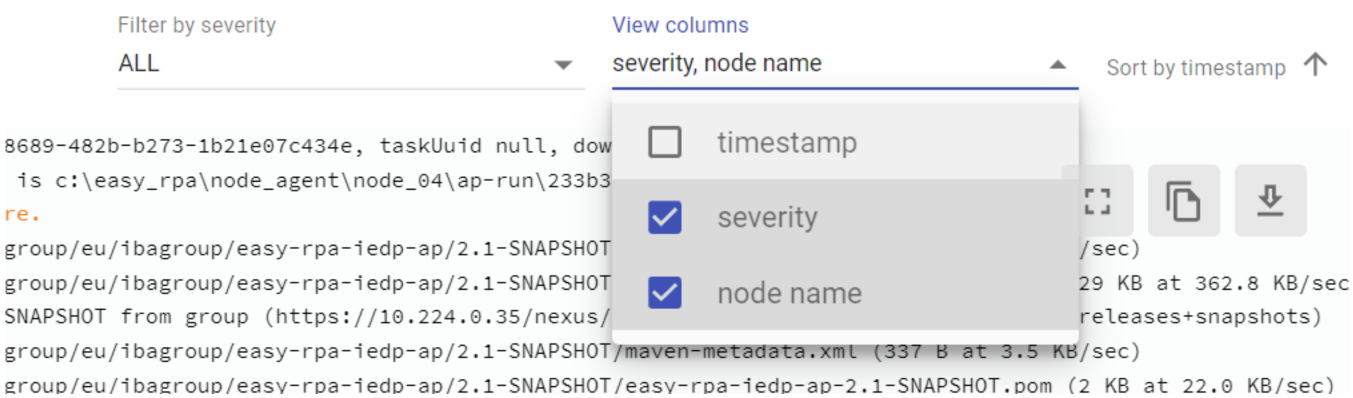
Filter by severity

Filtering allows you to choose the level of severity of the displayed logs from the dropdown menu. The available options are as follows:



View columns

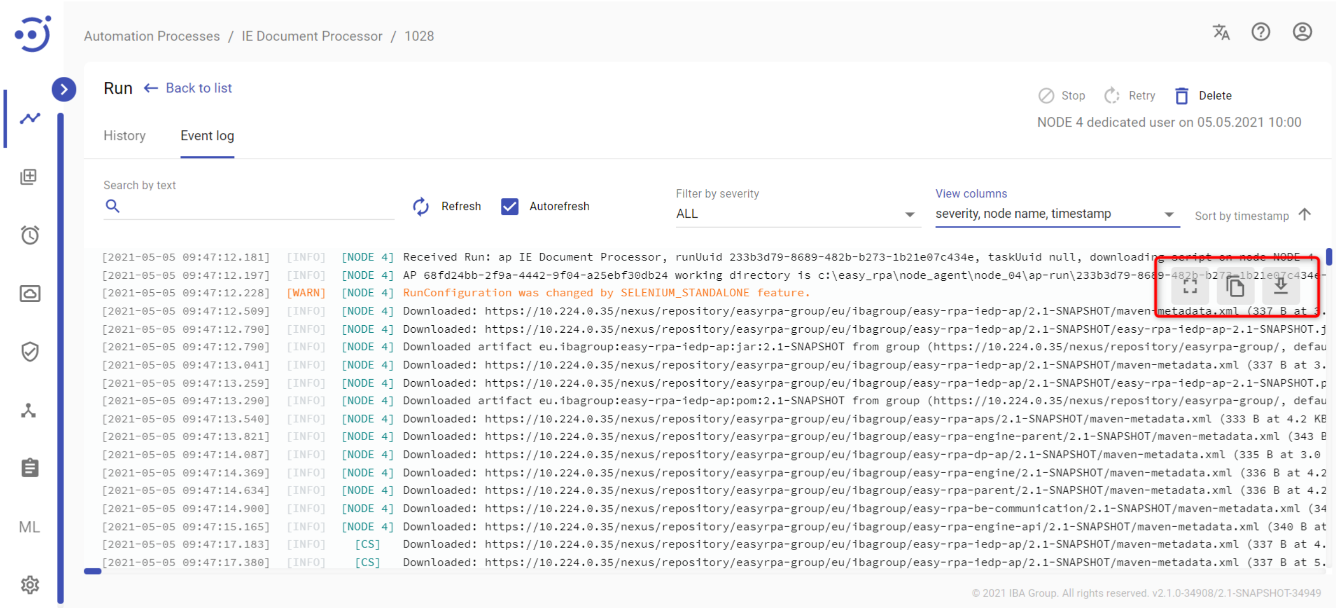
You can add or remove the columns timestamp/severity/node name from the event log view.



Sort by timestamp

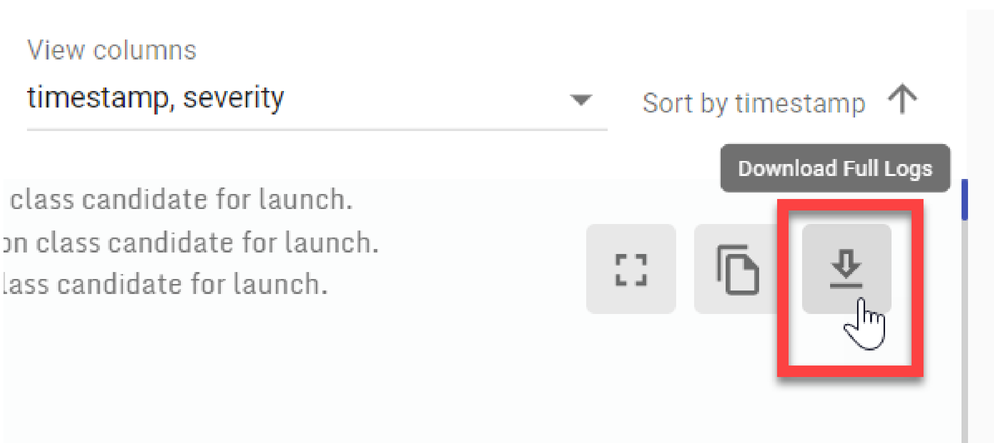
Ascending/descending logs sorting by the timestamp is allowed.

In the upper-right corner of the logs window there are buttons for opening logs in the full browser window, copying logs to the clipboard and downloading a .txt file with logs:

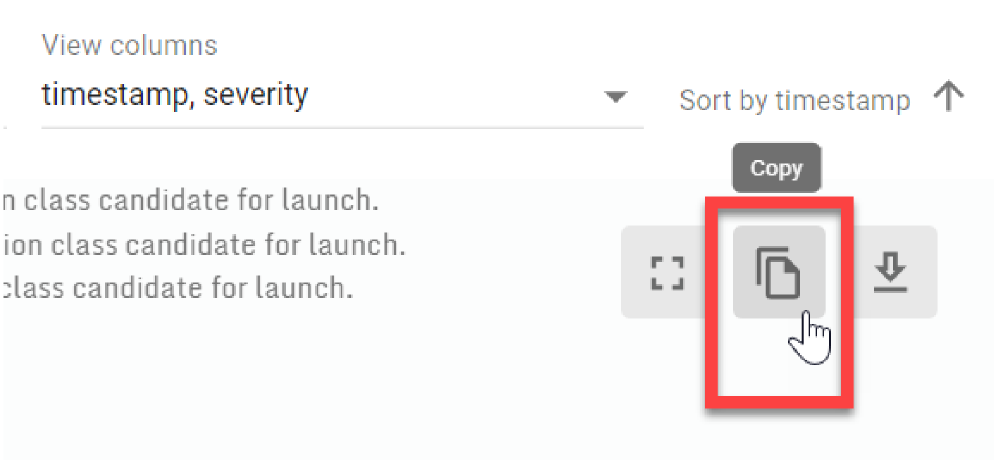


"Not Full Logs" indicator appears at the bottom right corner when the log becomes too long for one page.

To download full logs use Download button:



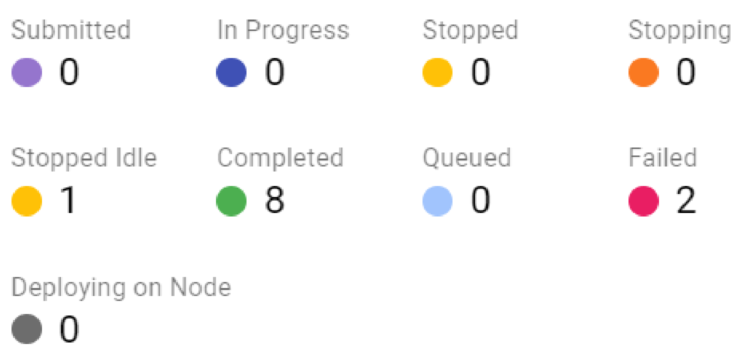
To copy the displayed logs only use Copy button:



The following section describes the life cycle of the automation process and the corresponding statuses that it may have.

Automation Process Run Status Lifecycle

- **Submitted** - transient status responsible for downloading artifacts and their capabilities that are necessary for starting the AP.
- **Queued** - describes the state when the automation process gets queued on the Control Server side and is waiting for a free node (one in status Idle) on which it can be executed. The node is searched among not dedicated nodes on Control Server based on the capabilities described in (v. 2.2) Automation Process Details (Details tab). The "Queued" status is received by the process immediately after clicking the "Start run" button if the required node is busy, and is active until the necessary node is found.
- **Deploying on Node** - the automation process receives the status when it finds the node required for its execution and is assigning to that node.
- **In Progress** - describes the state when the automation process is executed on the node.
- **Stopping** - transient status responsible for stopping the automation process run. The AP receives the status immediately after clicking the "Stop" icon.
- **Stopped** - the automation process receives the status when its execution is stopped. It is possible to retry stopped automation processes.
- **Stopped Idle** - the automation process receives the status when nothing happened with the task for some time. For example, Human tasks are in the Workspace without changes.
- **Failed** - describes the automation process that is failed with an error. The details of the error can be found in the "Event Log" of the automation process run.
- **Completed** - indicates the successful completion of the automation process run.



Control icons

The following actions can be applied to the automation processes with corresponding statuses:

	Stop	Retry	Delete
Submitted			
Queued			
Deploying on node			
In Progress			
Stopping			
Stopped			
Stopped Idle			

Failed			
Completed			

(v. 2.2) Dedicated Automation Processes

The EasyRPA Control Server allows running Dedicated Automation Processes, that can be launched by the users on their own machines.

- Dedicated Automation Processes Overview
- Create a Dedicated Automation Process
- Start a Dedicated Automation Process Run

Dedicated Automation Processes Overview

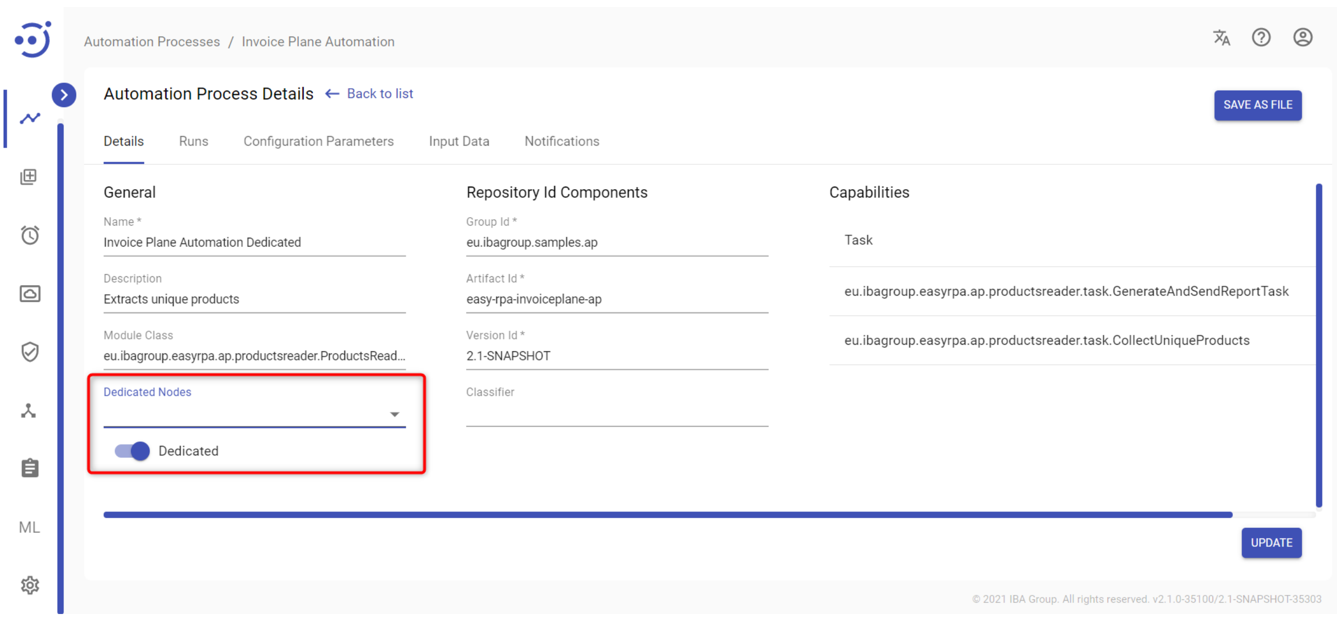
The automation processes intended for a specifically dedicated node (or groups of nodes) are configured by the administrator and marked as Dedicated on the Control Server side. The node agent is installed on the working machine, where the user operates. The dedicated user can navigate to the user-friendly dashboard with all dedicated automation processes and launch them with one click (it is not possible to start a dedicated AP run from the Control Server).

Create a Dedicated Automation Process

To create a Dedicated Automation Process you need to:

- Navigate to the Automation Process Details section.
- Enable the **Dedicated** mode.
- Choose the appropriate **Dedicated Nodes**.

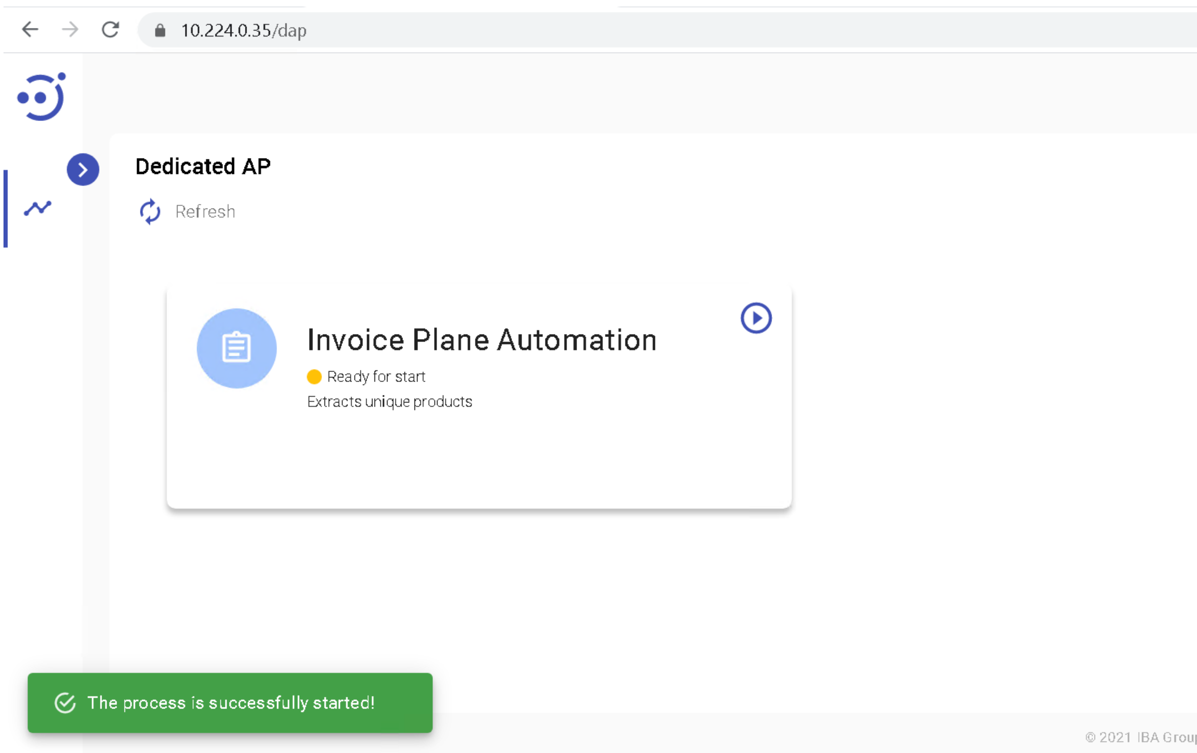
If the automation process is dedicated, then the Capabilities do not work and the assignment of automation processes occurs on a specifically dedicated node (there may be several of them).



Start a Dedicated Automation Process Run

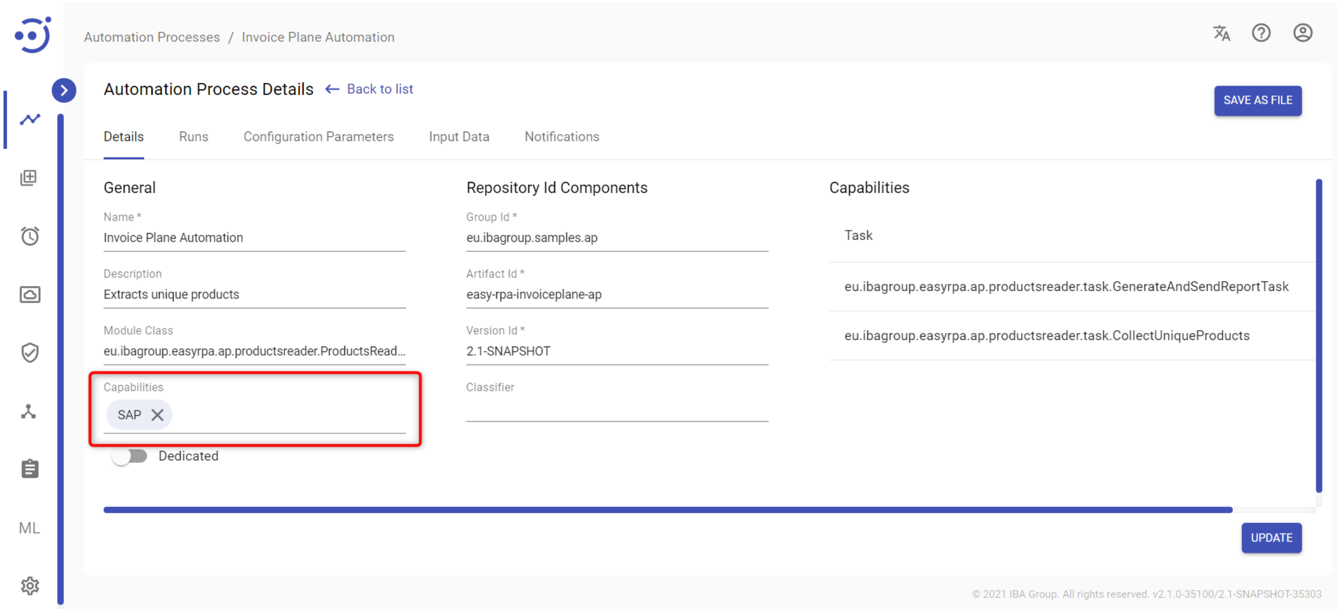
To launch the Dedicated Automation Process assigned by the administrator, the user needs to:

- Launch a web browser on the working machine.
- Connect via a special URL (which ends with /dap) to the Control Server (e.g. https://10.224.0.35/dap).
- Get into the view, which shows dedicated automation processes assigned to the machine.
- Click start run for the appropriate automation process.


10.224.0.35/dap
Dedicated AP
Refresh
Invoice Plane Automation
Ready for start
Extracts unique products
The process is successfully started!
© 2021 IBA Group

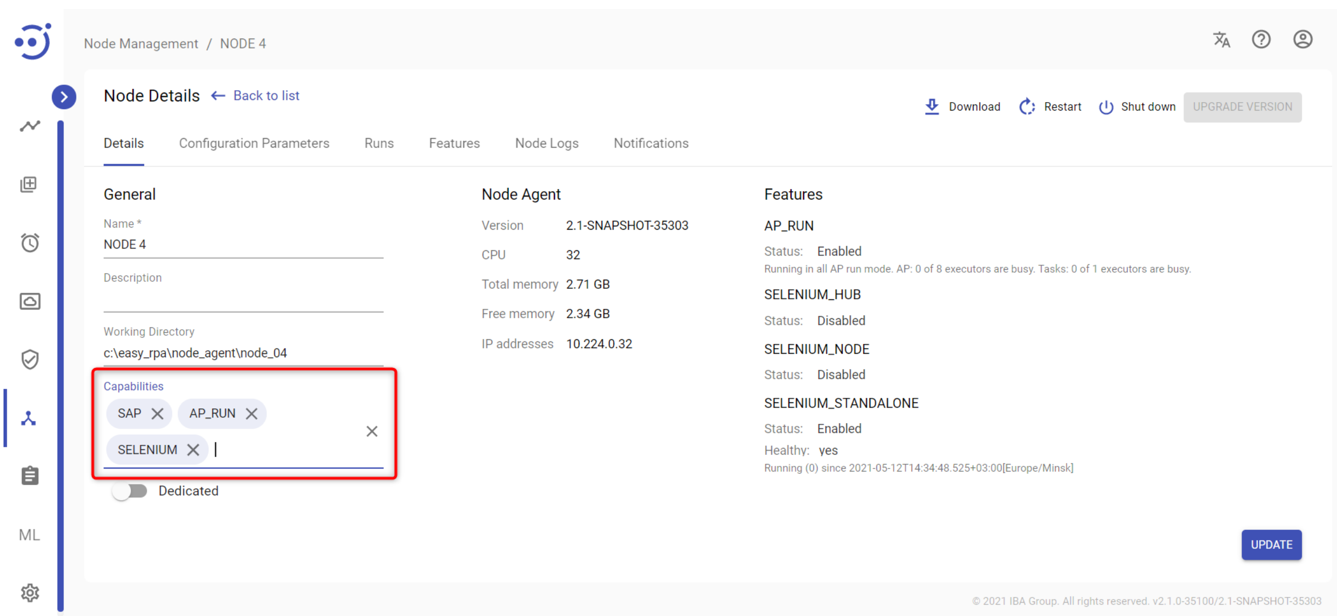
(v. 2.2) Capabilities: Automation Process-to-Node Communication

The decision on which Node the Automation Process will be launched is made based on the Capabilities. While launching, the AP checks whether there are available nodes with a suitable set of capabilities for the automation process execution. If the necessary node is found, the AP starts to run on that node. Capabilities are presented as a system of linking tags.



The EasyRPA Control Server allows executing the automation processes on the nodes. Node - is any machine where the node agent, the EasyRPA Control Server client, is installed. The node agent must be configured according to the configuration from the Control Server. See Node Management Configure a new Node. The Automation Processes are linked to the Nodes with the capability labels. Capabilities - are tags assigned to the Nodes and Automation Processes. When the new Node instance is created on the Control Server, the administrator specifies which capabilities the node supports.

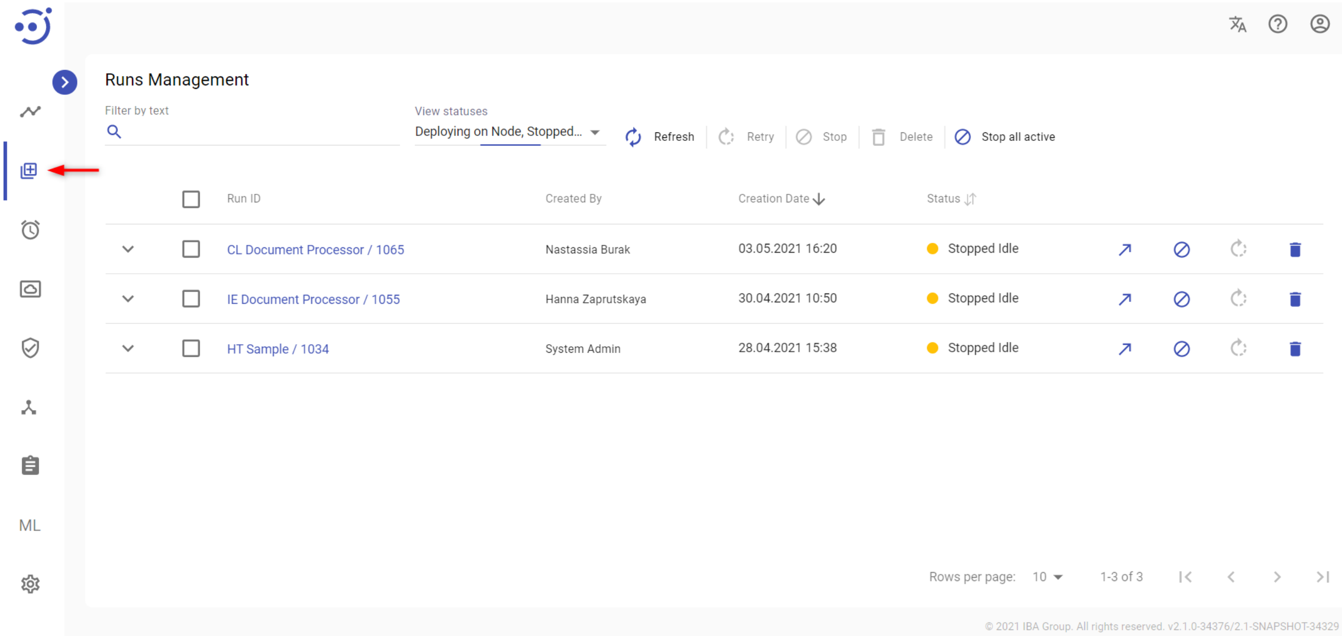
⚠️ For example, if the node can serve requests for the automation of SAP applications (i.e. is configured by the administrator to serve SAP applications), the tag SAP should be added to the Capabilities of the node. Automation processes that automate SAP must also have the SAP capability tag so that the process can be passed to a node that supports this functionality.



The Automation Process that needs several capabilities for the execution (multiple Capability tags are specified) will look for the node that has all these capabilities. If the necessary node is not found, the automation process will receive the status "Deploying on Node", it means that the system is waiting for the node with all the required capability to execute the automation process. As soon as the AP finds a node with the required capabilities, it receives the status "Queued", which means that the AP is in the queue for processing. When the process starts execution, it receives the status "In Progress". For more information about the automation process workflow, see Automation Process Run Status Lifecycle.

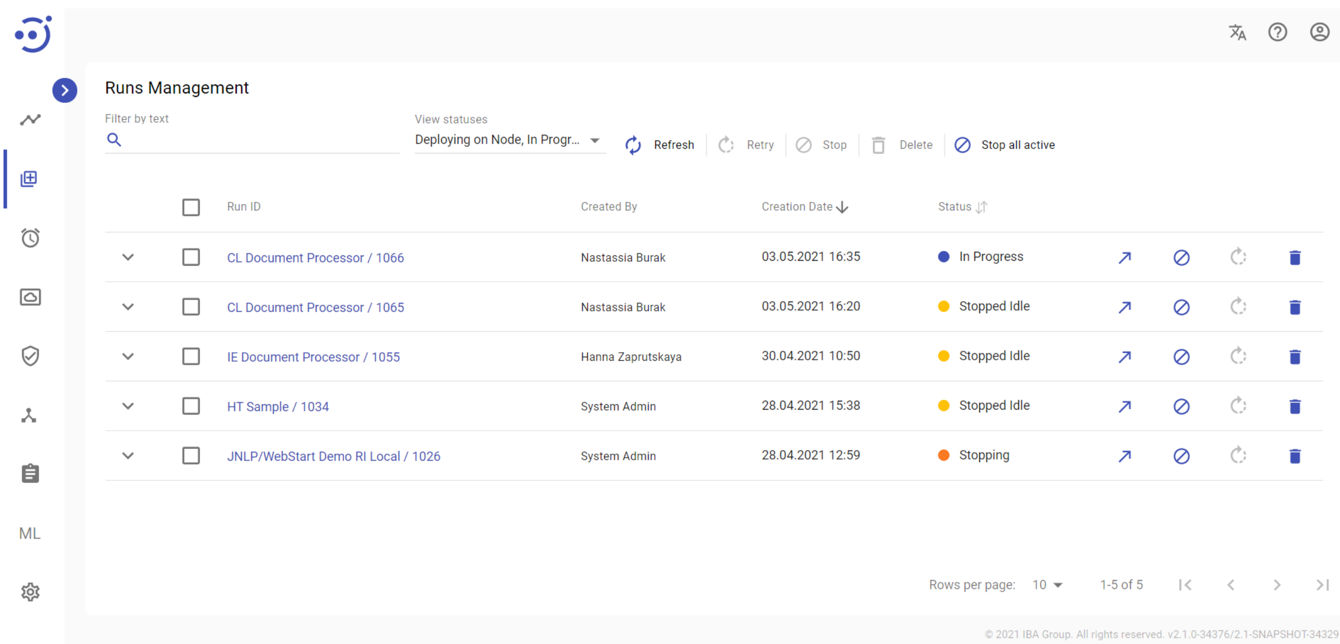
(v. 2.2) Runs Management

The Runs Management module allows users to manage and display active Automation Processes Runs at the moment.



Active runs

By default the module displays all Automation Processes Runs in the following statuses: Deploying on Node, In Progress, Stopping, Stopped Idle, Queued (See Automation Process Run Status Lifecycle). Runs in Stopped, Submitted, Failed, Completed statuses can be displayed as well.

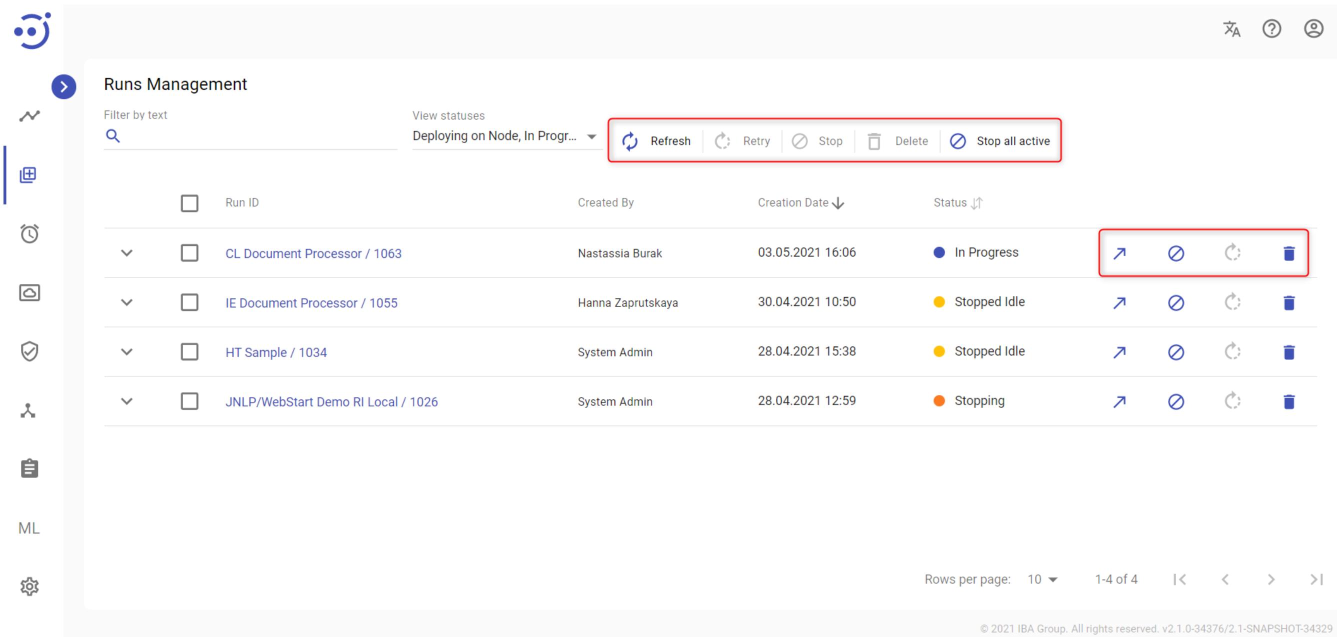


Columns Description

- Run ID - The Automation Process Name and a numeric identifier of the particular process run. By clicking on the Run Id, you can see the history of the particular process run.
- Created By - the automation process run author name.

- Creation Date - the date and time when the process was created.
- Status - the current status of the automation process run.

Control icons



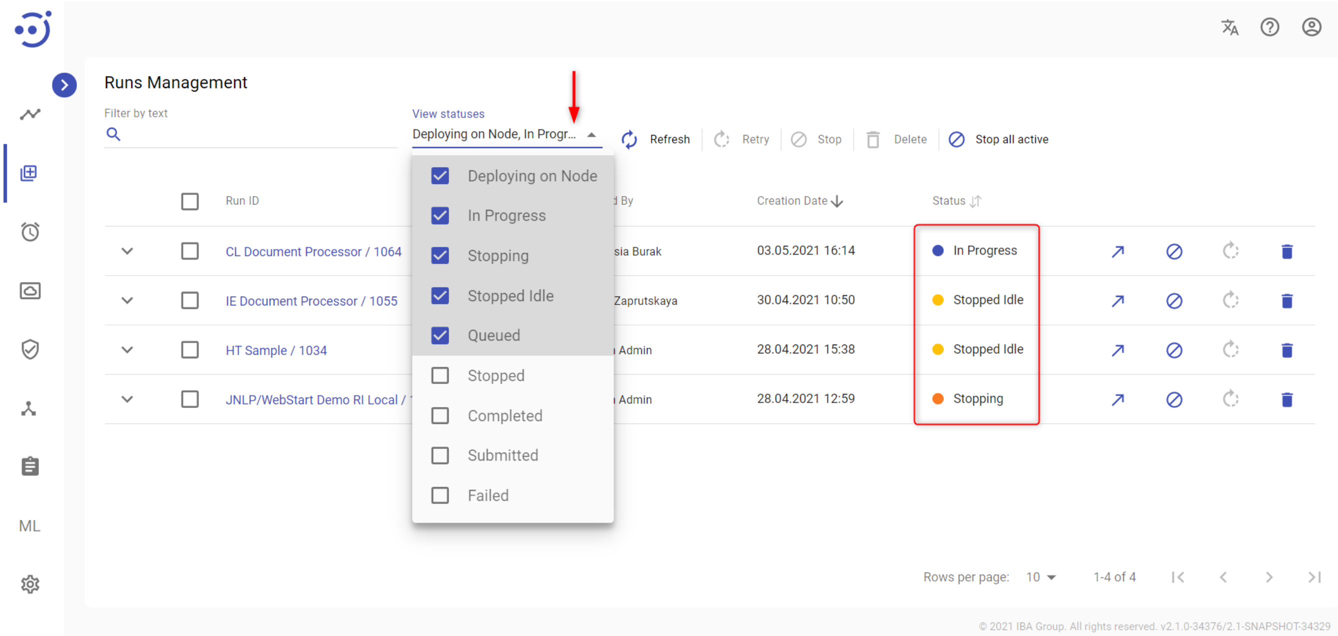
- **Refresh** - to pull the last processes runs from the server.
- **Retry** - to repair the automation process run. Available for runs with statuses Failed, Stopped. Required Permission: AutomationProcess-ACTION. See (v. 2.2) Role Permissions.
- **Stop** - to stop the automation process run. Available for runs with statuses Deploying on Node, In Progress, Stopping, Stopped Idle, Queued. Required Permission: AutomationProcess-ACTION. See (v. 2.2) Role Permissions.
- **Stop all active** - to stop all automation process runs in Deploying on Node, In Progress, Stopping, Stopped Idle and Queued statuses. This action will stop launches in the specified statuses, even if other statuses are displayed in the table. Required Permission: AutomationProcess-ACTION. See (v. 2.2) Role Permissions.
- **Delete** - to delete the selected automation process run. Required Permission: AutomationProcess-DELETE. See (v. 2.2) Role Permissions.
- **Open run log** - to see the logs of the particular automation process run. See Automation Process Run for more information. Required Permission: AutomationProcess-READ. See (v. 2.2) Role Permissions.

Filter by text

Filtering allows you to search the Automation Processes run by Run ID, Created By, Status columns.

View statuses

Filtering allows you to choose statuses in the View statuses dropdown.

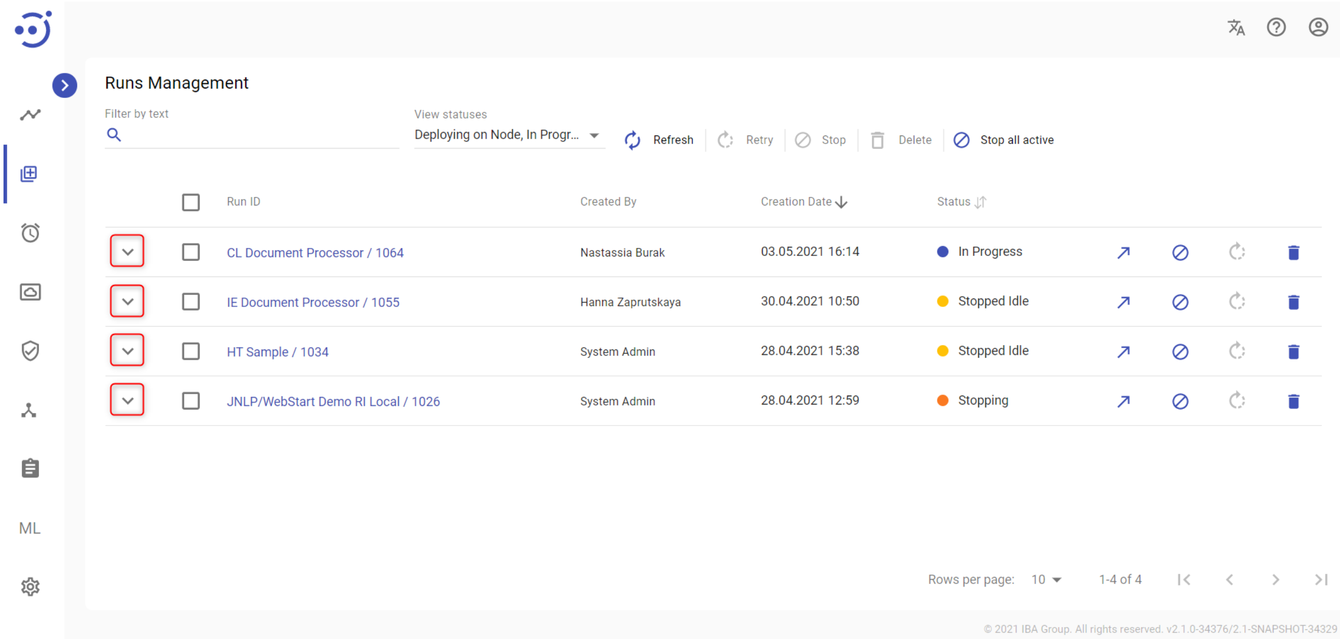


Sorting

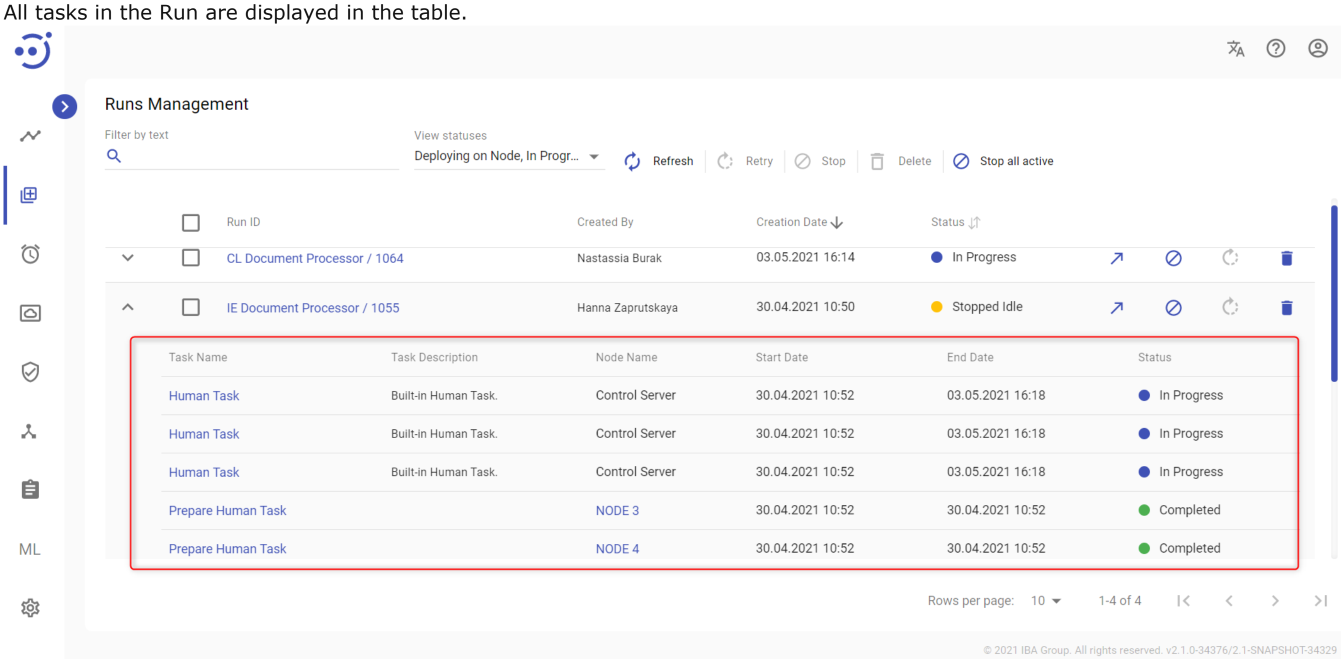
Ascending/descending sorting is allowed for the Creation Date and Status columns.

Tasks

After clicking on the "" icon - table with all tasks for the Run is opened.
The table contains all the tasks and corresponding Nodes, on which the Runs are performed.



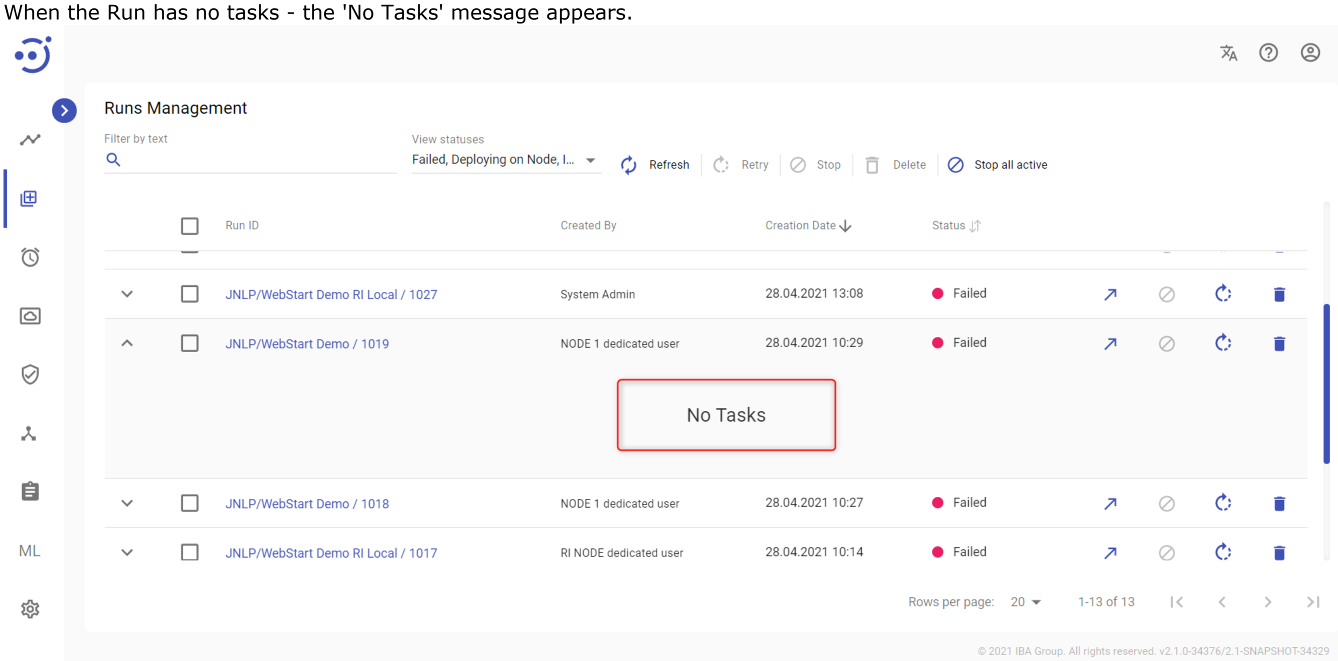
All tasks in the Run are displayed in the table.



Columns Description:

- Task Name - the name of the task.
- Task Description - a short description of the task functionalities.
- Node Name - the node name, after clicking on the Name - you redirect on the Node Logs. If a Node is not needed for task execution, "Control Server" is displayed.
- Start Date - the date and time when the task was created.
- End Date - the date and time when the task has lasted.
- Status - current status of the task.

When the Run has no tasks - the 'No Tasks' message appears.



When you click on the icon "" - the task table is hidden.

(v. 2.2) Schedules

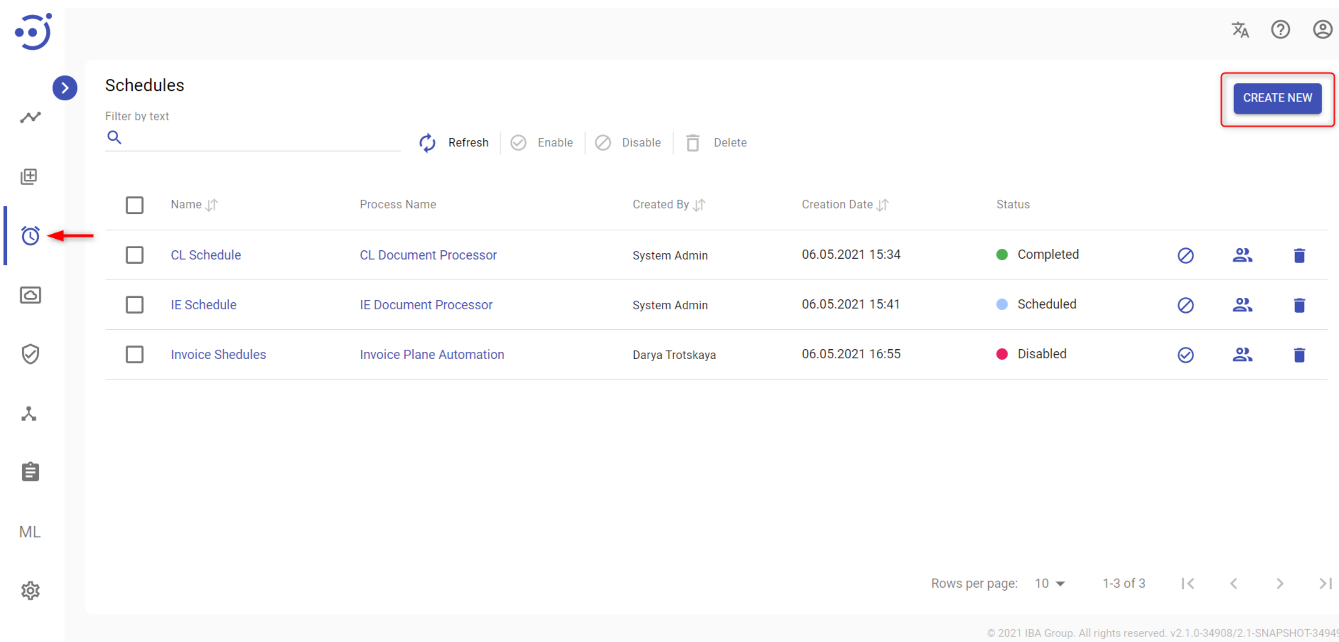
(v. 2.2) Schedule an Automation Process

Besides running your automation process manually, you can set up a schedule to run the automation process periodically at fixed times, dates, or intervals.

Create a New Schedule

To create a schedule:

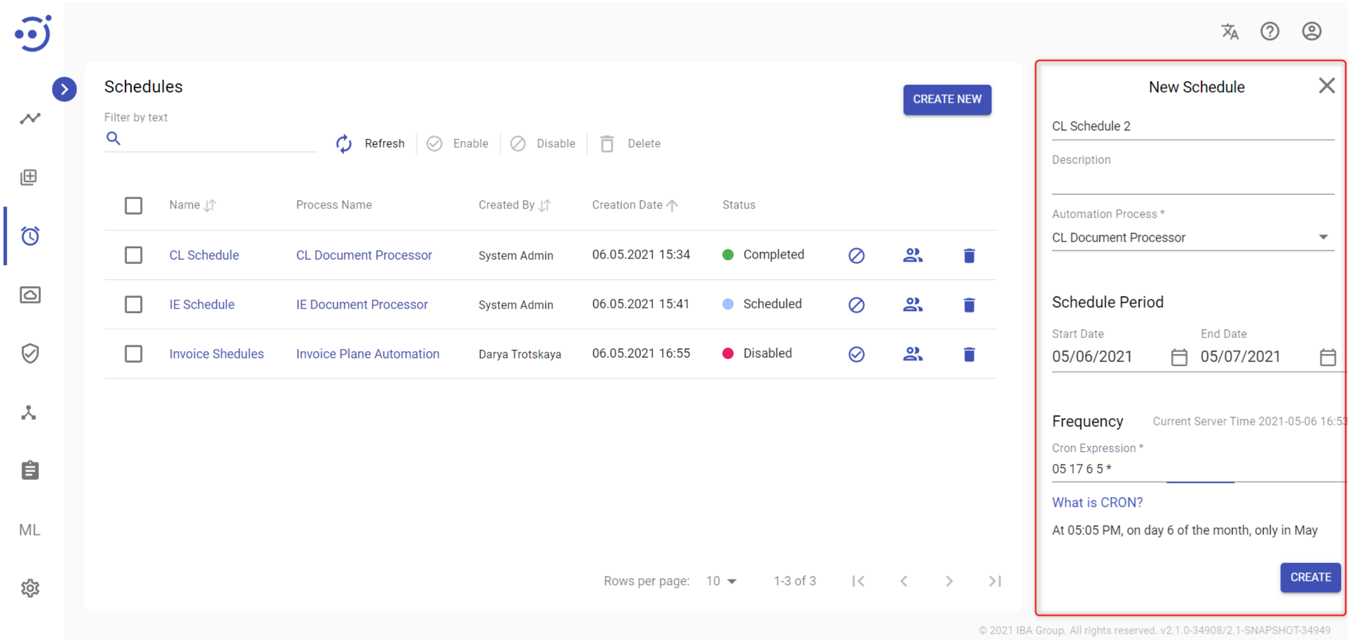
1. Go to the **Schedules** module and click **Create New**.



2. In the **New Schedule** pop-up panel:

- Enter a unique **name** to distinguish the schedule.
- Enter **description** optionally.
- Select the **automation process** you need to run.
- Set the **schedule period** (type in start and end dates in the mm/dd/YYYY format or select the values from the dropdown menus).
- Set the **schedule frequency** using CRON expression.

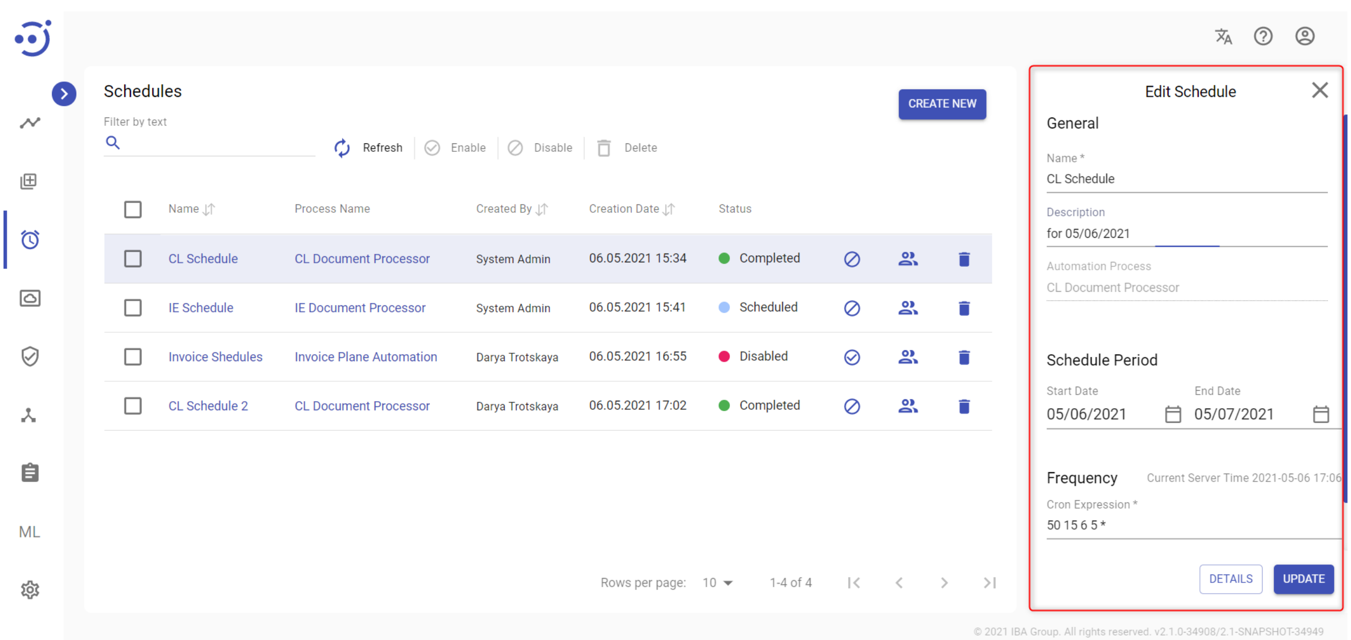
⚠️ The schedule will be triggered according to the schedule frequency only within the schedule period.



3. Click **Create** button.

View/Edit a Schedule via a right-side panel

To view the detailed information about an existing schedule, click at any place in the corresponding row of the automation process schedule and the information pop-up will appear. To edit the information about a particular schedule, edit necessary fields at the information pop-up and click the **Update** button.

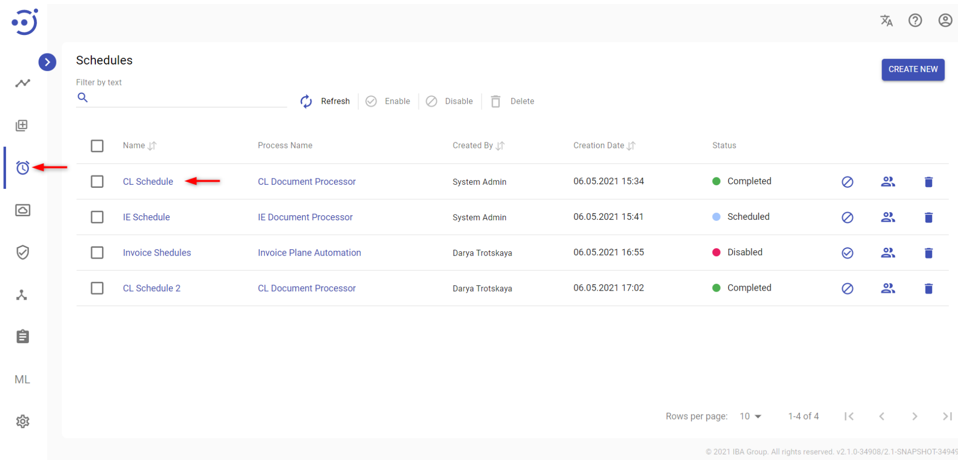


Schedule Details

The Details tab displays the Run schedule and the Schedule settings.

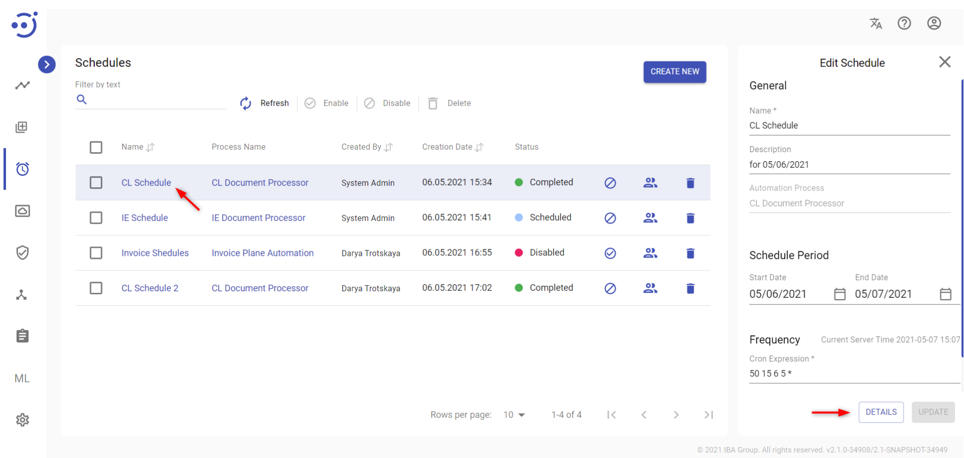
To view/edit Schedule details, you need to:

- Navigate to the Schedules module and Click on the corresponding Schedule Name.



or

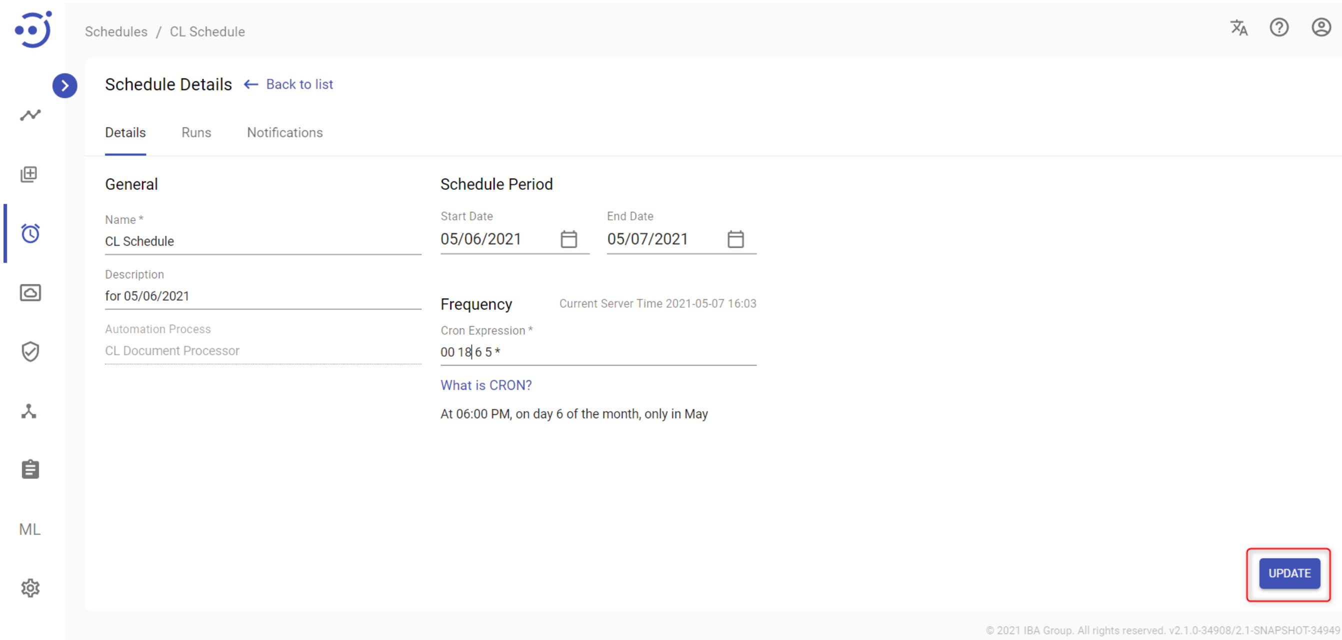
- Navigate to the Schedules module, Click on the corresponding row with the Schedule, and at the pop-up panel click Details.



View/Edit a Schedule via Schedule Details

To view/edit Schedule details, you need to:

- Change one of the field values.
- Click **Update.**



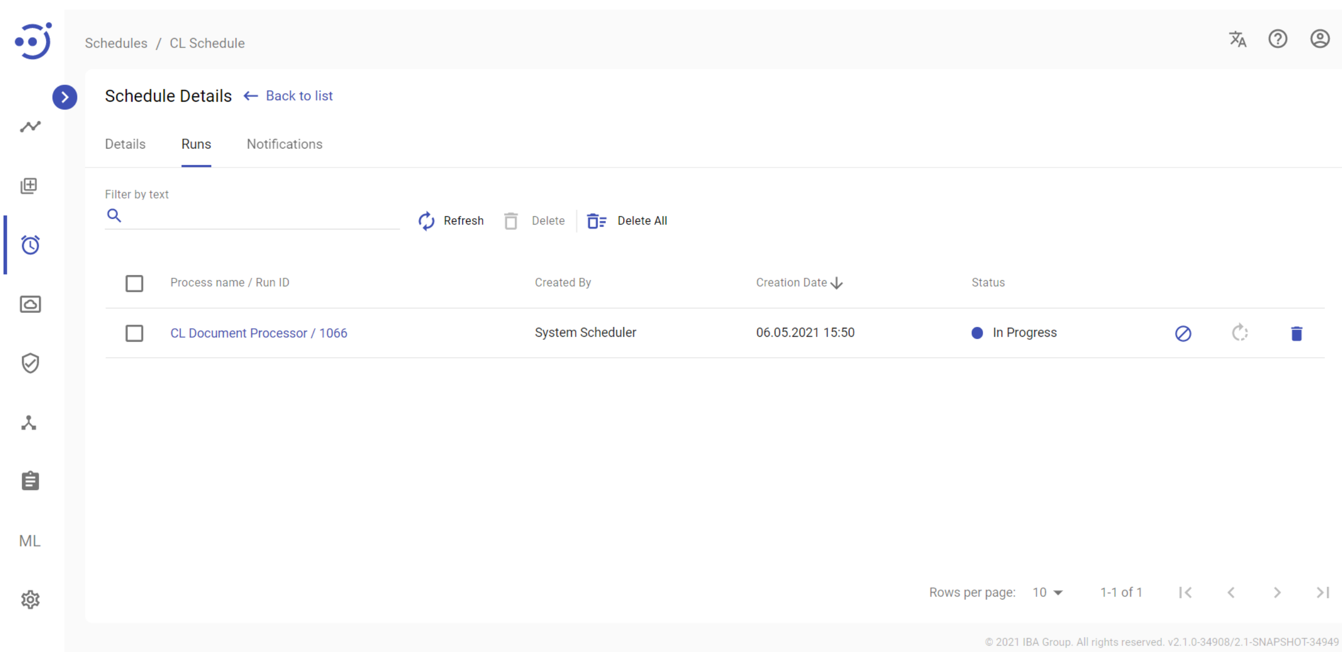
Fields Description

- Name - the schedule name.
- Description (optional) - a short description of the schedule.
- Automation process - selected automation process for the Schedule, the field is not edited.
- Start and End dates in the mm/dd/YYYY format.
- Schedule frequency using CRON expression.

Schedule Runs

The Runs tab contains information about all runs of a particular Schedule and their statuses. You can manage the automation process runs using Control icons.

When the schedule starts an automation process, it creates a separate instance of this process.



Columns Description

- Process name / Run ID - the automation process name / numeric identifier of the particular process run.
- Created By - the automation process runs initiated by the schedule will have System Scheduler value
- Creation Date - the date and time when the Run was created.
- Status - the current status of the Run.

Control icons

- **Stop** - to stop the automation process run. Required Permission: Schedule-ACTION. See (v. 2.2) Role Permissions.
  ⚠️ Note: the process is included when Status of Run is Queued, Deploying on Node, In Progress, Stopping, Stopped Idle.
  In other statuses the button is disabled.
- **Retry** - to repair the automation process run. Required Permission: Schedule-ACTION. See (v. 2.2) Role Permissions.
  The Run is deleted from the Schedule after clicking Retry, the Run is on the Automation Process Runs tab.
  ⚠️ Note: the process is included when Status of Run is Stopped and Failed.
  In other statuses the button is disabled.
- **Delete** - to delete the selected automation process run. Required Permission: Schedule-DELETE. See (v. 2.2) Role Permissions.
- **Delete All** - to delete all the automation process runs that were started on this Schedule. Required Permission: Schedule-DELETE. See (v. 2.2) Role Permissions.

Filter by text

Filtering allows you to search the automation process by Process name / Run ID column, Status and its author (Created By column).

Sorting

Ascending/descending sorting is allowed for the Creation Date column.

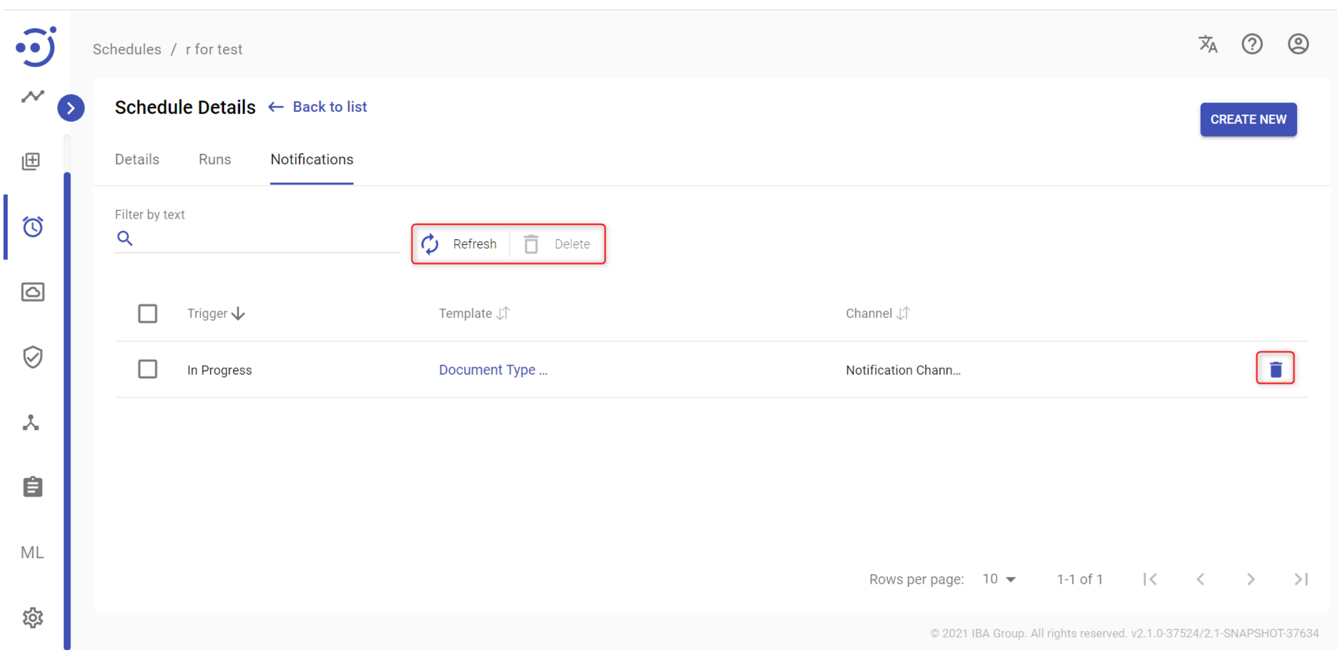
Related pages

Clicking on the Process name / Run ID value will lead to the "History" page of the selected automation process run. See Automation Process Run for more information.

See Automation Process Run Status Lifecycle for more information about the automation process statuses and control icons.

Notifications

The Notifications tab allows users to receive messages about a particular AP Run. To access the Notifications, you need to be granted Schedule-READ permission. See (v. 2.2) Role Permissions.



Columns Description

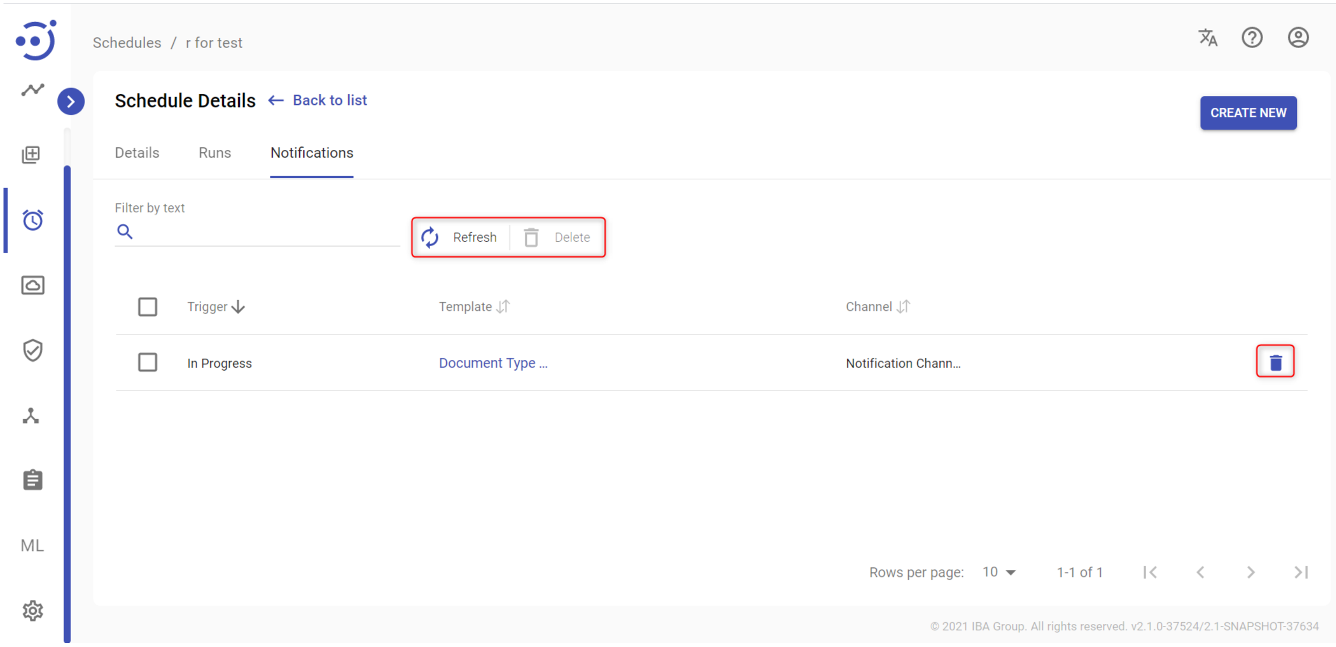
- Trigger - the action for which the message is sent to the particular channel.
- Template - example of a message is sent to a channel.

- Channel - mailing list of contacts.

Control icons

- Refresh - to refresh the page.
- Delete - to delete Notifications.

Required Permission: Schedule-UPDATE.



Filter by text

Filtering allows you to search the automation process by **Trigger, Template and Channel**.

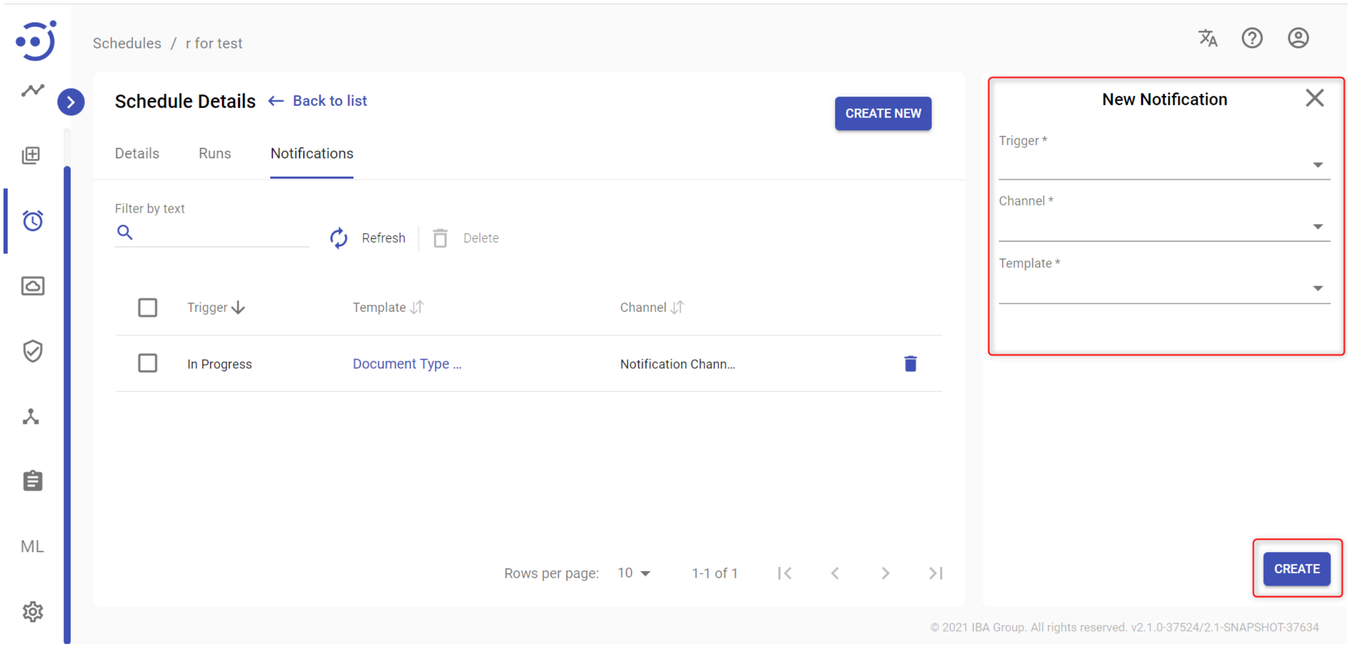
Sorting

Ascending/descending sorting is allowed for the **Trigger, Template and Channel** columns.

Create a New Notification

To create a New Notification:

1. Click "**Create New**" button.
2. In the New Notification pop-up panel enter **Trigger, Chanel, Template.**
3. Click **CREATE.**

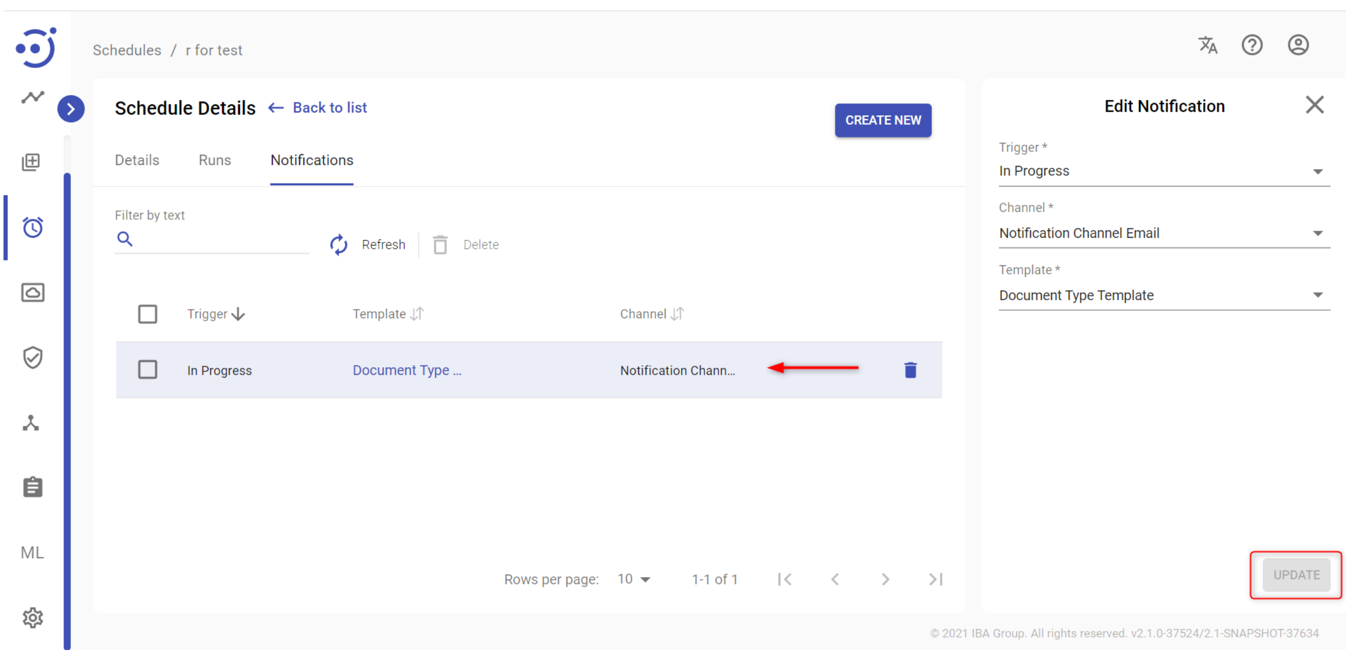


To create the Schedule Notifications, you need to be granted Schedule-UPDATE permission. See (v. 2.2) Role Permissions.

Update Notifications

To **Update** an existing notification parameters, you need to:

- Click on the corresponding notification.
- Change one of the field values.



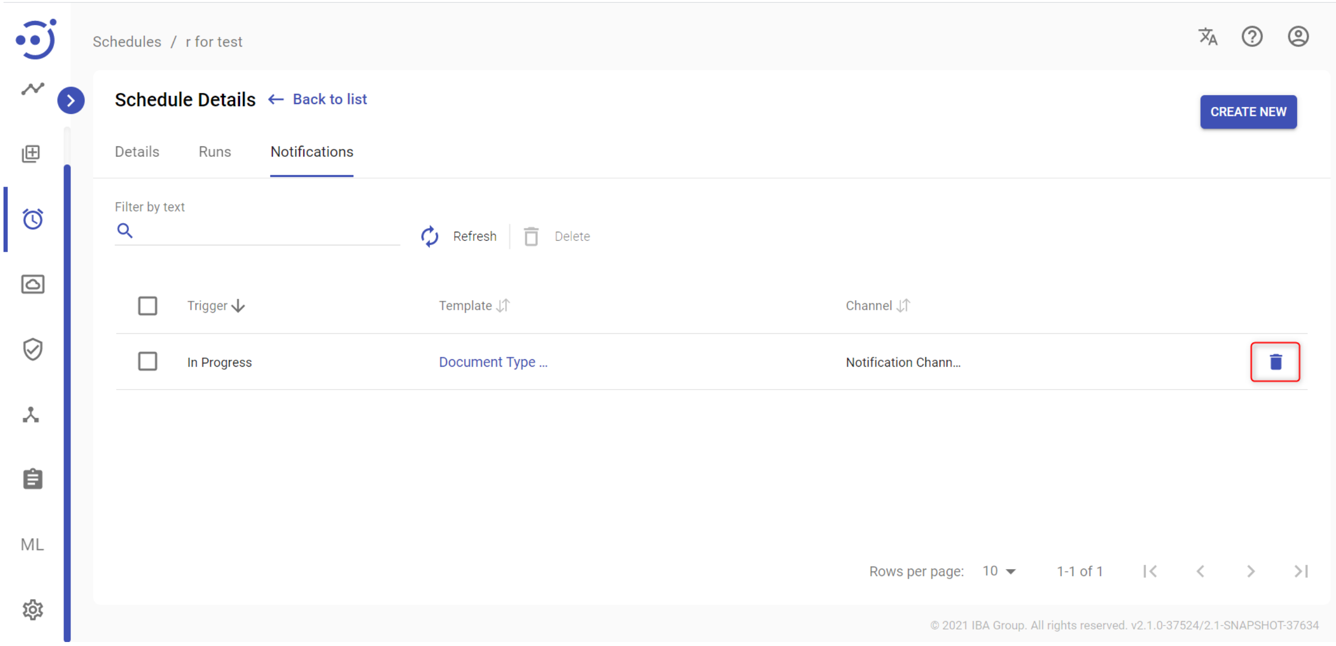
- Click **Update**.

To update the Automation Process Notifications, you need to be granted AutomationProcess-UPDATE permission. See (v. 2.2) Role Permissions.

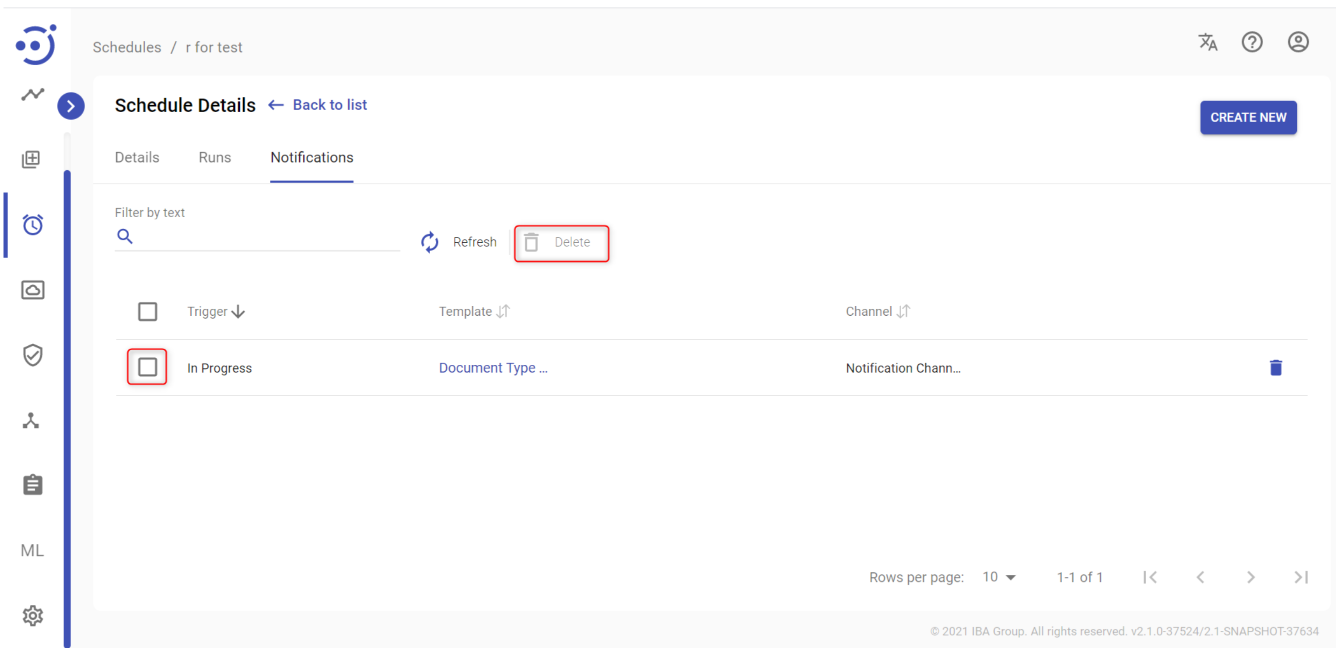
Delete Notifications

There 2 ways to **Delete** Notifications:

- **Press** control icon **Delete.**



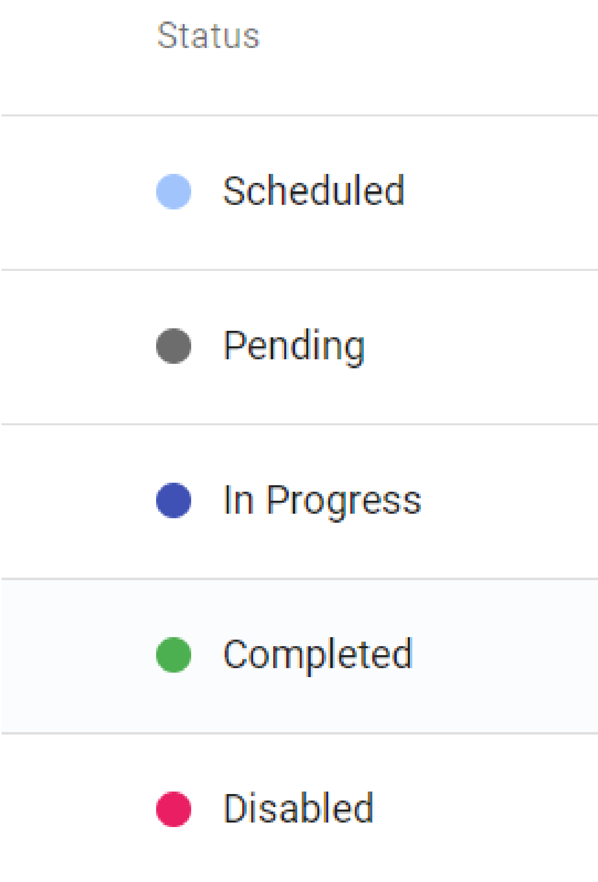
- Choose the particular (or all) Notification and press icon **Delete.**



You need to be granted Schedule-UPDATE permission. See (v. 2.2) Role Permissions.

(v. 2.2) Schedule Statuses Life Cycle

The schedule can receive the following statuses during its life-cycle:



Once the schedule is created, it receives status:

- **Pending** - if the start date has not come yet.
- **Scheduled** - if the start date has already come, but there have not been any automation process runs yet.

As soon as the automation process starts first run, the schedule gets the status:

- **In Progress**

When the end of the schedule time frame comes, the schedule receives the status:

- **Completed**

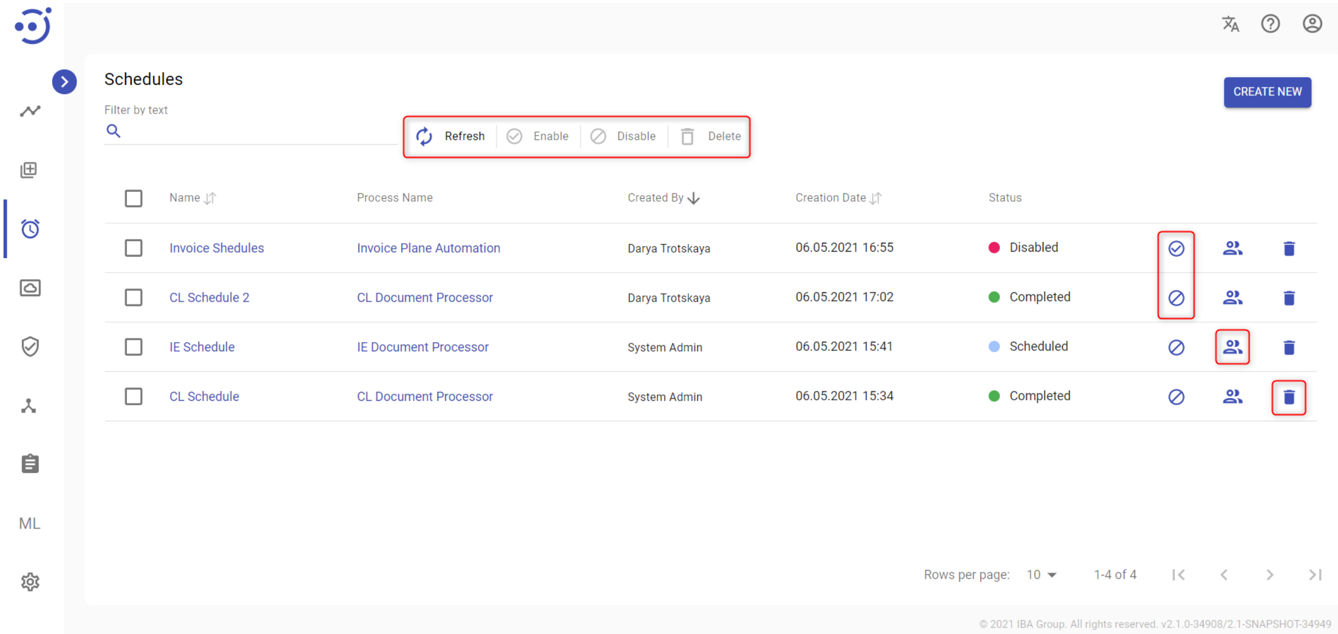
Once the process is disabled by the user, it receives status:

- **Disabled**

Control icons

You can enable or disable any schedule, refresh page and delete a schedule at any stage using control buttons.

- **Refresh** - to pull the last updates from the server.
- **Enable/disable** - to make enable or disable any schedule.
- **Delete** - to delete the data store (via the recycle bin control icon in the table row or Delete icon above the table).
- **Security Access -** See (v. 2.2) Security Access.



Filter by text

You can search for the necessary schedules using filtration by Name, Process Name, Created By, Status.

Sorting

Ascending/descending sorting is allowed for Name, Created By, Creation Date columns.

(v. 2.2) Data Stores

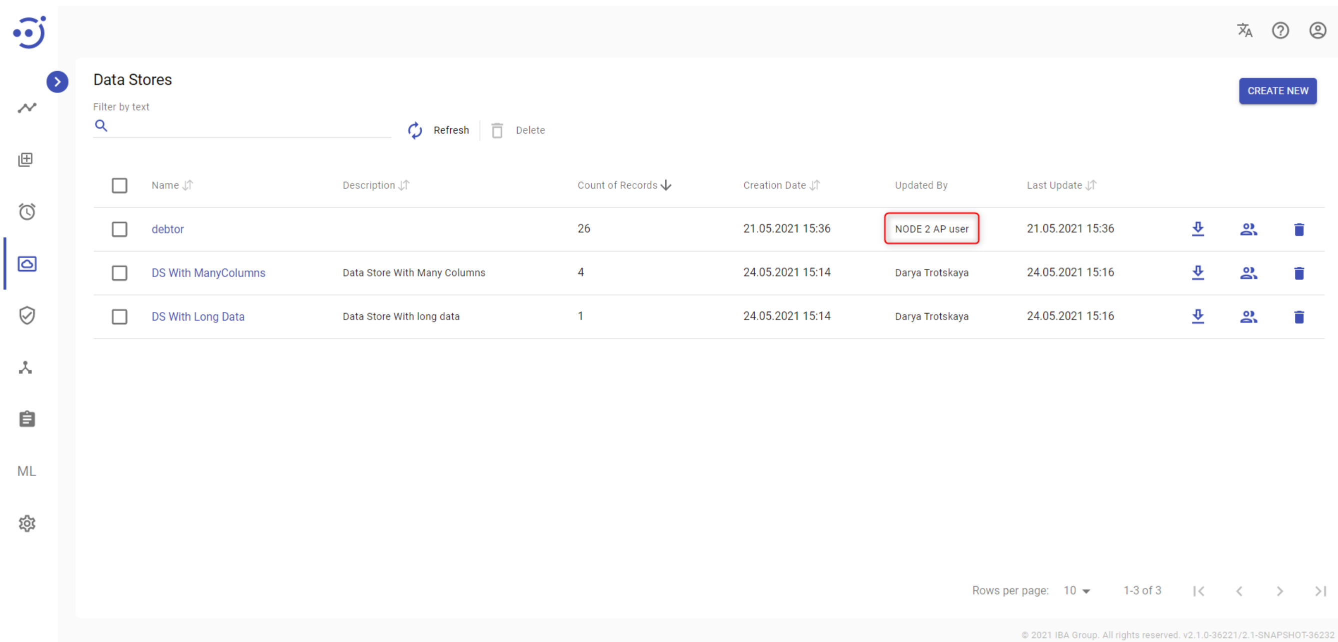
- (v. 2.2) Create a New Data Store
- (v. 2.2) Data Store Details

The Data Stores module displays a list of data stores available in the Control Server. EasyRPA Control Server allows users to store and manage automation process data with the help of data stores. It is possible to upload *.csv* file to a data store or add new records manually.

To manage Data Stores, users must have Data Stores modification permissions. See Role Permissions .

System Data Stores

The data store can also be created during the automation process run execution. In that case, the Created By column will contain the name and description of the Node that executed the corresponding automation process.



Columns Description

- Name - the data stores name.
- Description - a short description of the data stores.
- Count of Records - the number of records in the data stores.
- Creation Date - the date and time of the data stores creation.
- Updated By - the name of the user or Node, who change the data stores.
- Last Update - the last date and time when the data stores was changed.

Filter by text

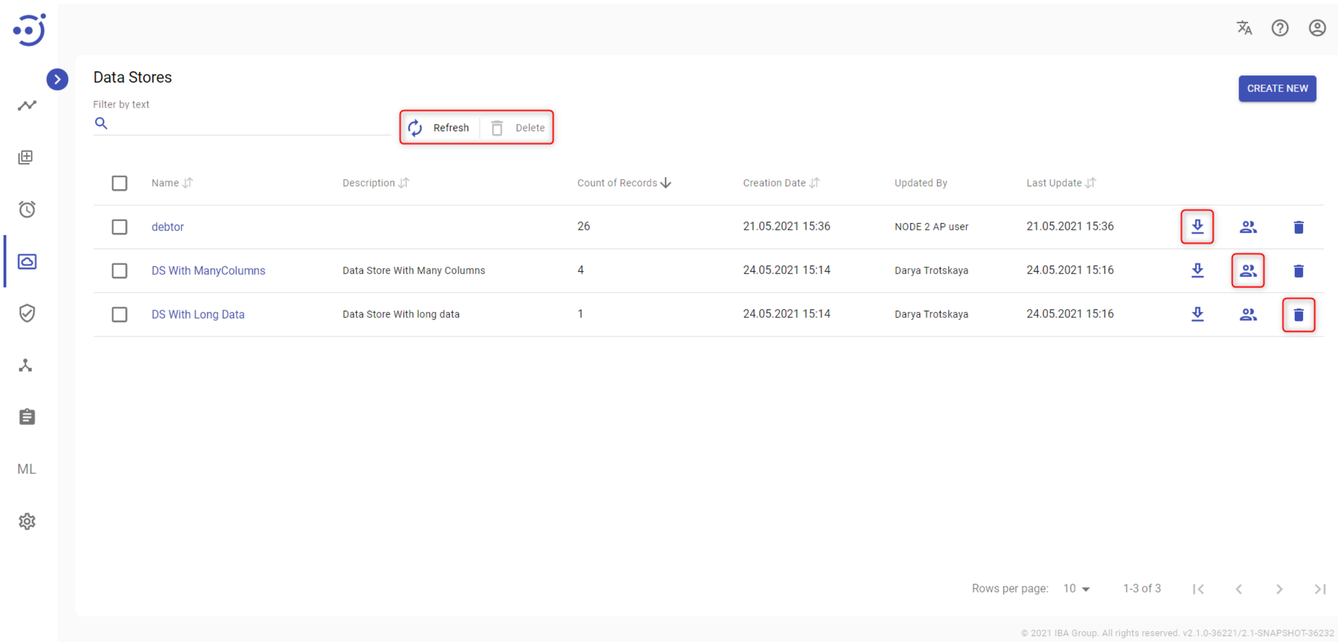
Filtering allows you to search the data store by the columns: Name, Description, Updated By.

Sorting

Ascending/descending sorting is allowed for the columns: Name, Description, Count of Records, Creation Date, Last Update.

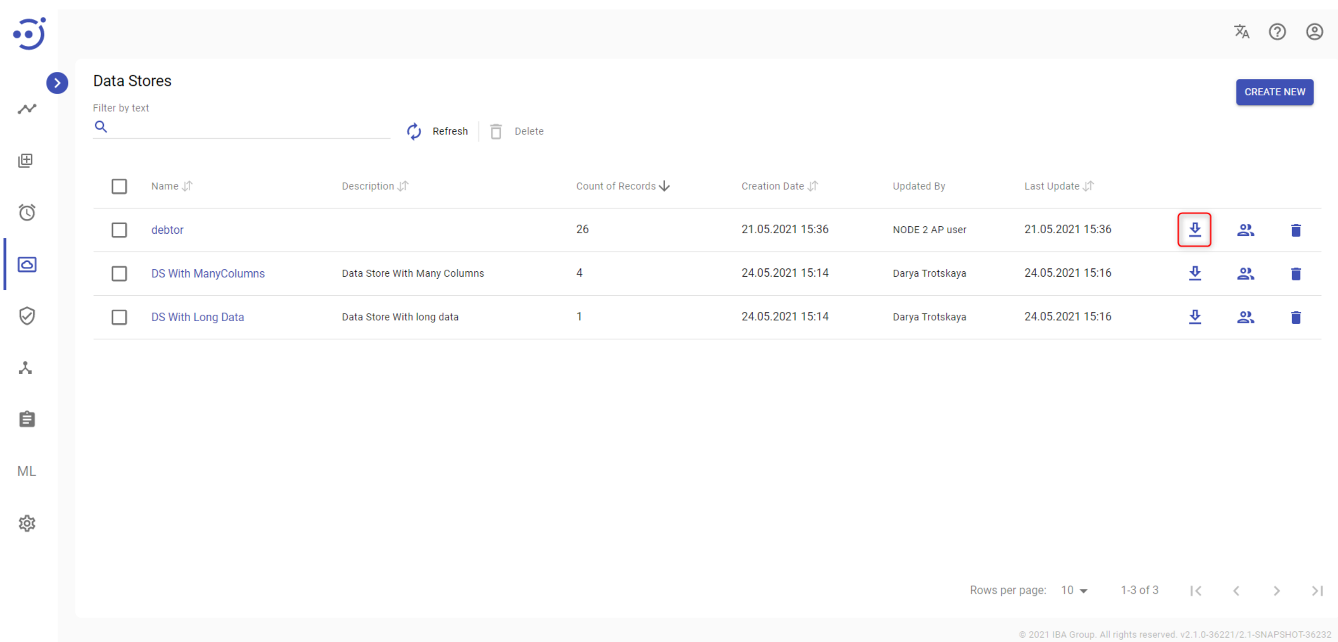
Control icons

- **Refresh** - to pull the last updates from the server.
- **Delete** - to delete the data store (via the recycle bin control icon in the table row or Delete icon above the table).
- **Download** - to download the data store in CSV or XLSX file.
- **Security Access -** See (v. 2.2) Security Access.

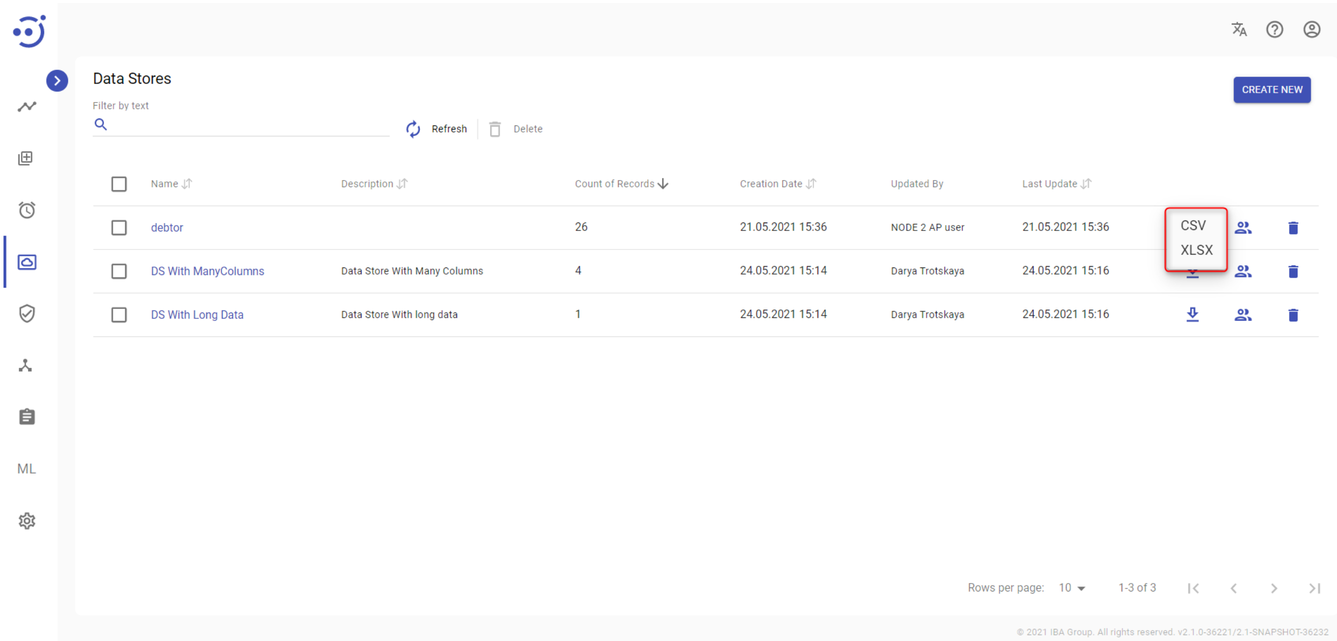


Download the data store

To select the file format to download, click on the **Download** button next to the desired datastore.



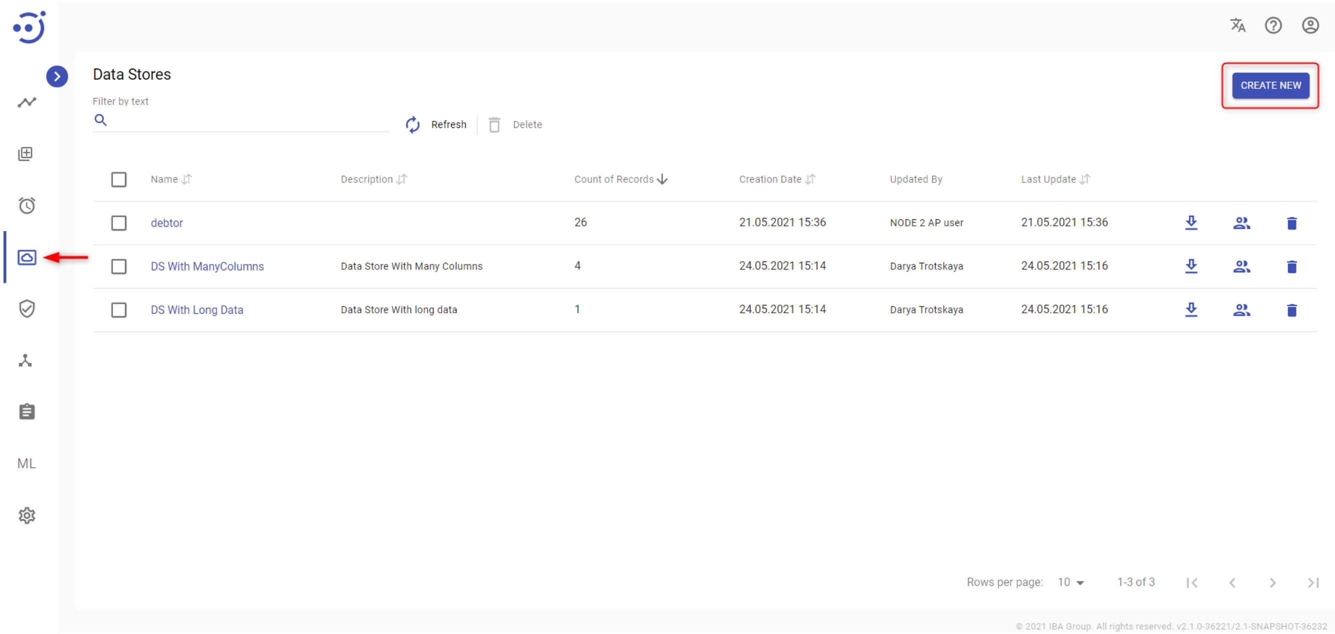
After clicking the button a list of available formats for downloading will be displayed.


Data Stores
Filter by text
Refresh
Delete
CREATE NEW
Name
Description
Count of Records
Creation Date
Updated By
Last Update
debtor
26
21.05.2021 15:36
NODE 2 AP user
21.05.2021 15:36
CSV
XLSX
DS With ManyColumns
Data Store With Many Columns
4
24.05.2021 15:14
Darya Trotskaya
24.05.2021 15:16
DS With Long Data
Data Store With long data
1
24.05.2021 15:14
Darya Trotskaya
24.05.2021 15:16
ML
Rows per page:
10
1-3 of 3

(v. 2.2) Create a New Data Store

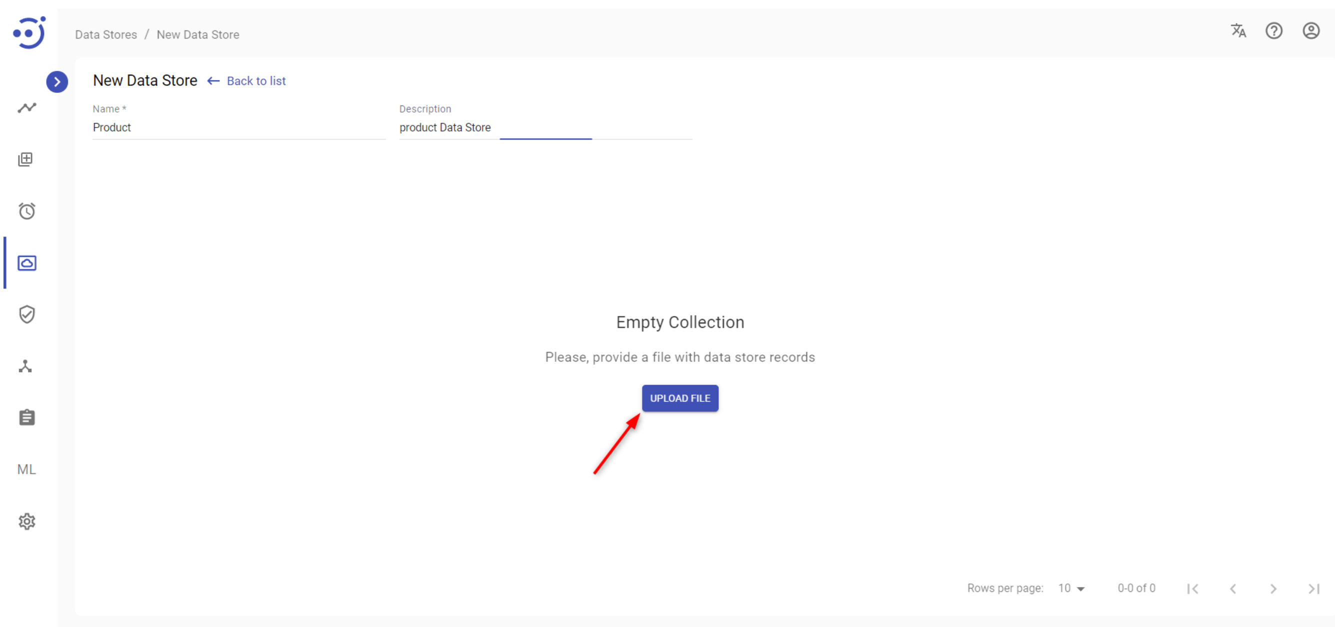
To create a New Data Store:

1. Go to the Data Stores module and click **CREATE NEW**:

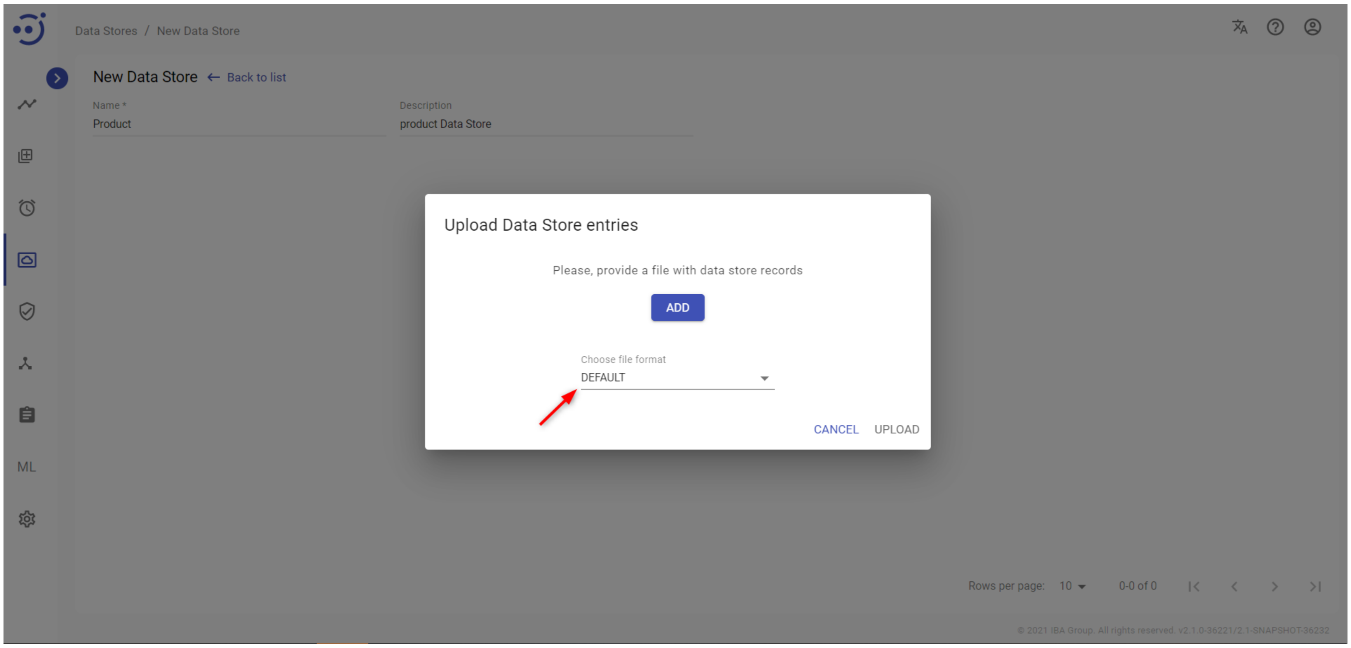


2. Enter a unique **Name** and **Description** to distinguish the Data Store.

3. Click **UPLOAD FILE** (Upload file by another format, the first row should contain column headers):

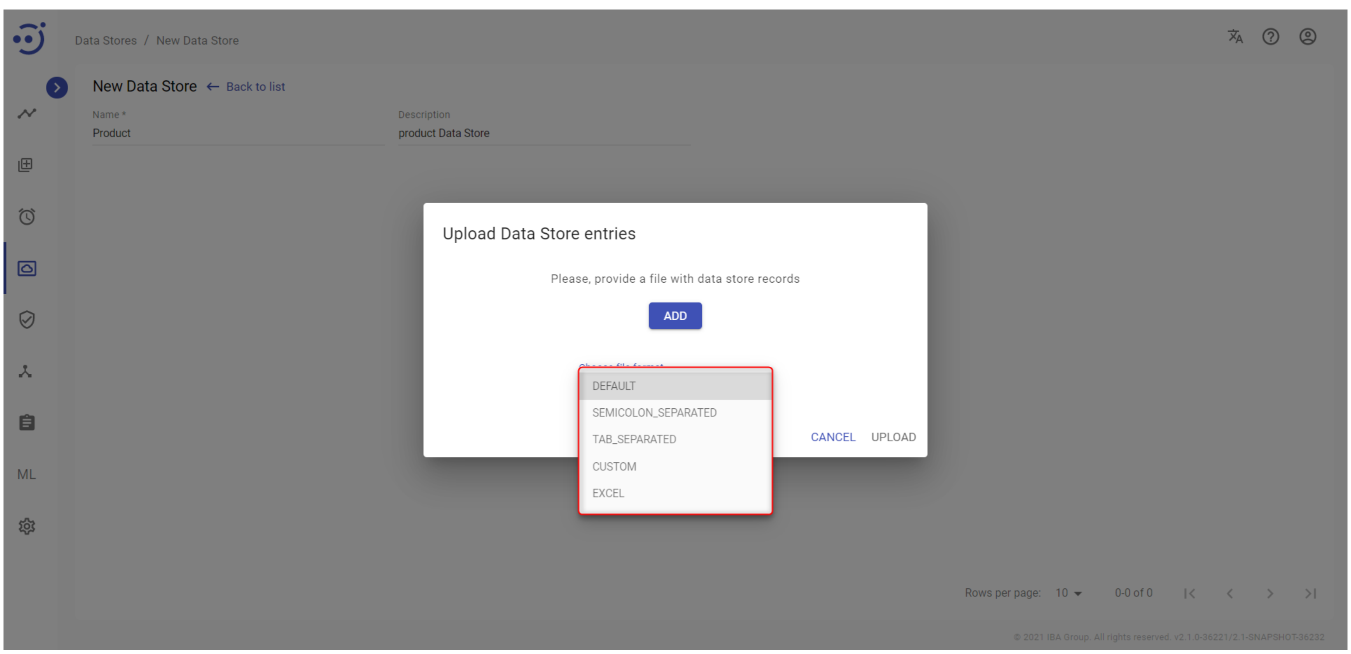


4. Choose file format:

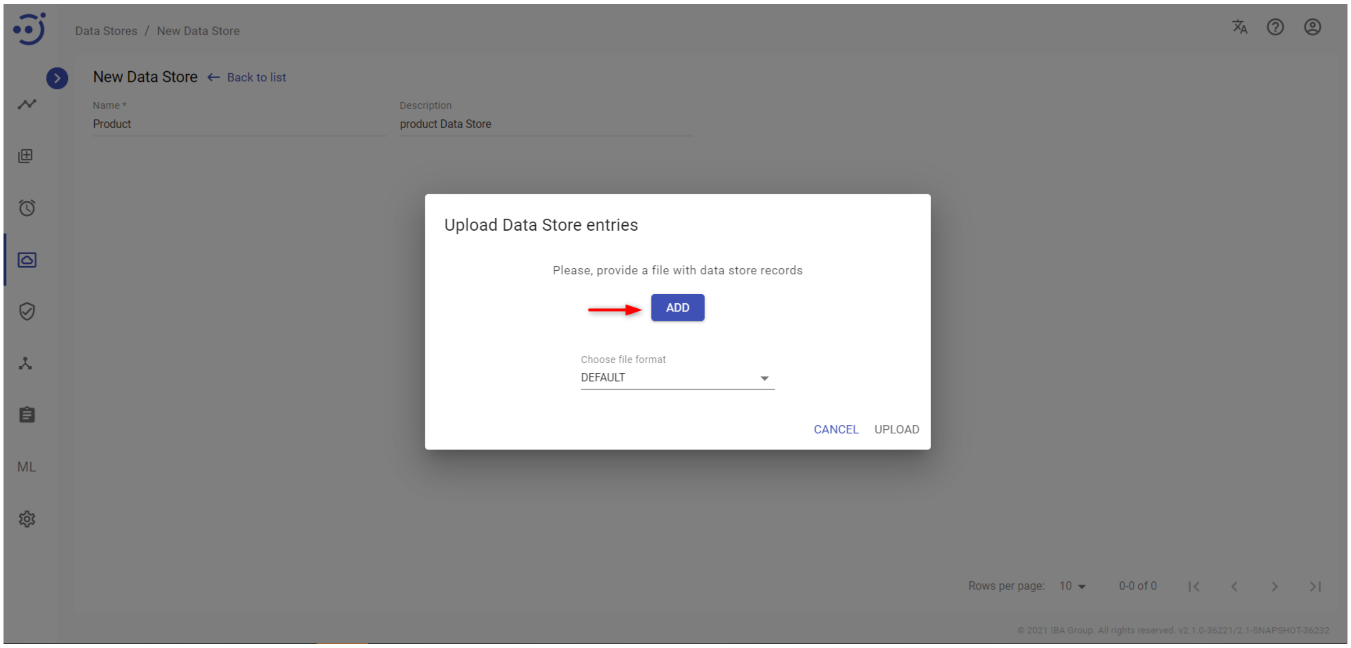


File format settings:

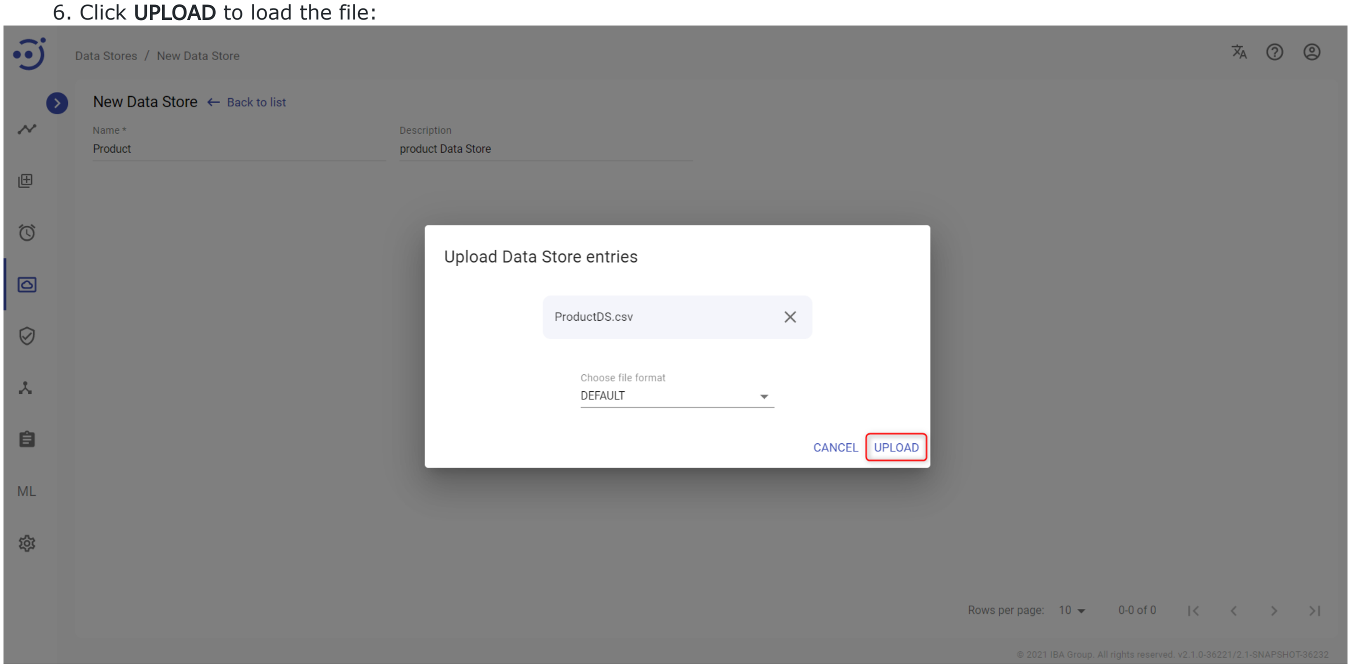
- DEFAULT - CSV file as a delimiter comma (,)
- SEMICOLON_SEPARATED - CSV file as a delimiter semicolon (;)
- TAB_SEPARATED - CSV file as a delimiter tab (\t)
- CUSTOM - CSV file as a delimiter comma (,) other options - for advanced user.
- EXCEL - Excel file in *.xlsx format. ⚠️ For correct import excel file use text format.



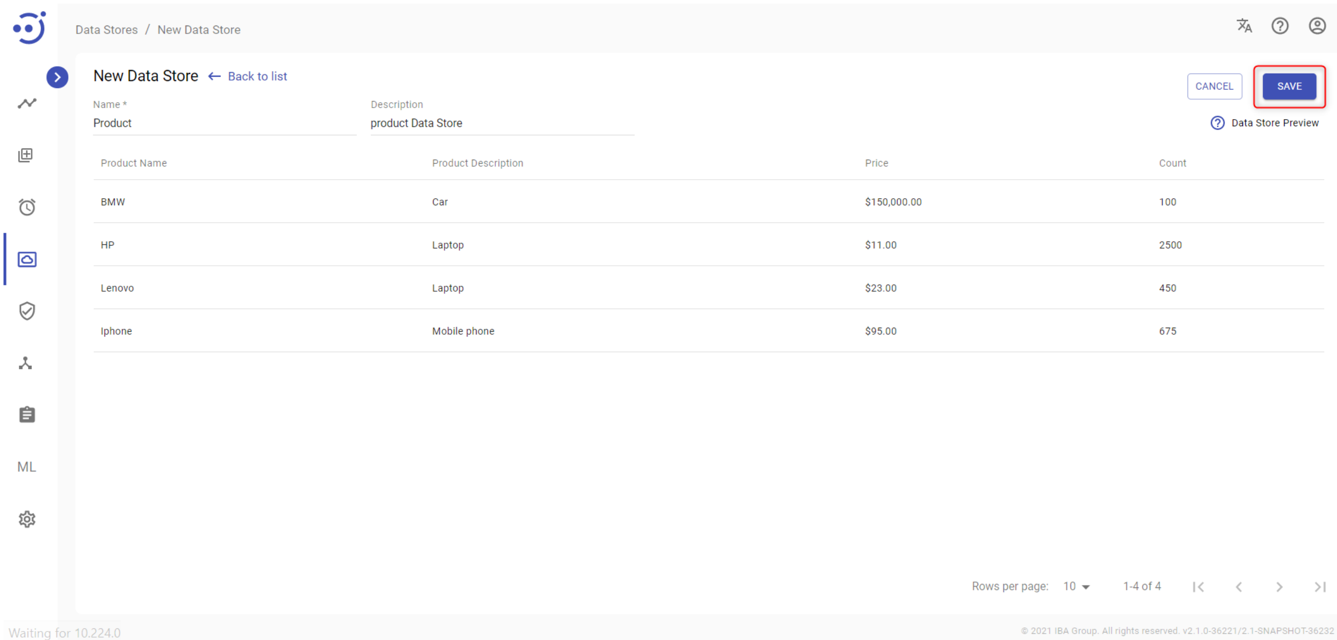
5. Click **ADD** to select file:



6. Click **UPLOAD** to load the file:



7. Click **SAVE**:


Data Stores / New Data Store
New Data Store
Back to list
CANCEL
SAVE
Name *
Product
Description
product Data Store
Data Store Preview
Product Name
Product Description
Price
Count
BMW
Car
$150,000.00
100
HP
Laptop
$11.00
2500
Lenovo
Laptop
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Iphone
Mobile phone
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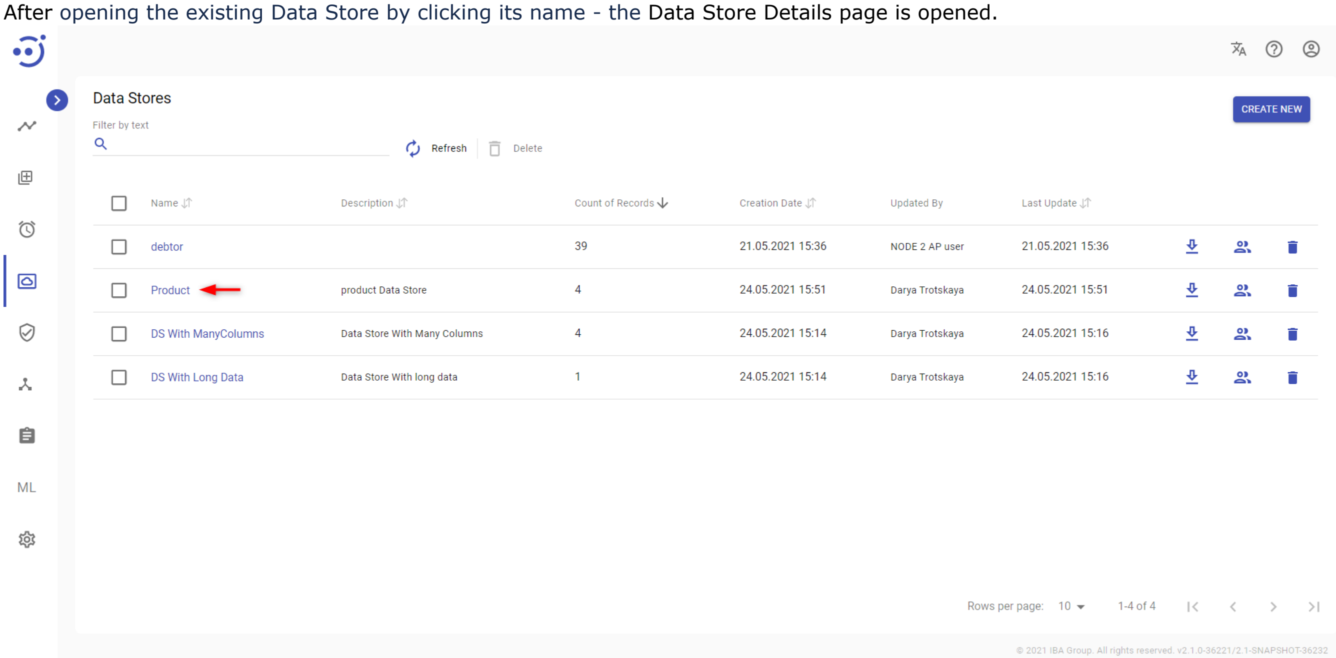
ML
Rows per page:
10
1-4 of 4
Waiting for 10.224.0
© 2021 IBA Group. All rights reserved. v2.1.0-36221/2.1-SNAPSHOT-36232

(v. 2.2) Data Store Details

- Options to Data Store
- Add New Records to Data Store
- Add New Records manually
- Upload a file to Data Store
- View/Edit an existing Record in Data Store

After opening the existing Data Store by clicking its name - the Data Store Details page is opened.

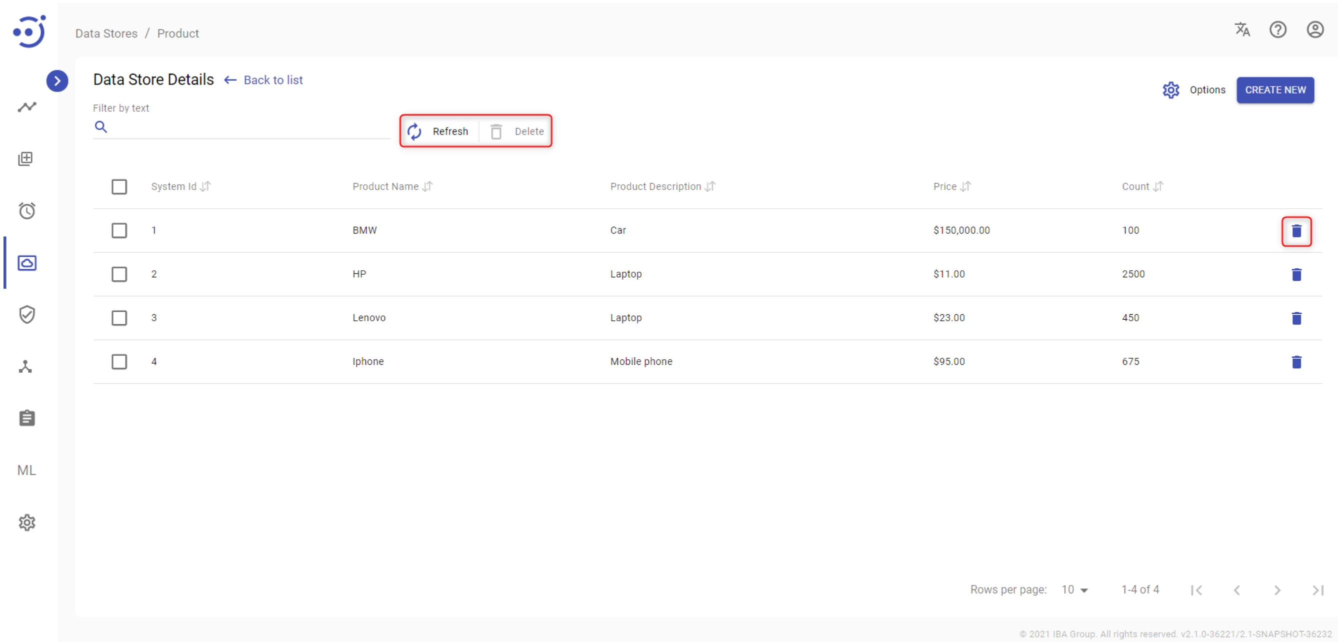


The page is used for the following actions:

- **Add** New Records to the Data Store. See Add New Records to Data Store.
- **Edit** Records for the Data Store.
- **Delete** Records from the Data Store.

Control icons

- **Refresh** - to refresh the page.
- **Delete** - to delete the selected records in the Data Store (via the recycle bin control icon in the table row or Delete icon above the table).



Filter by text

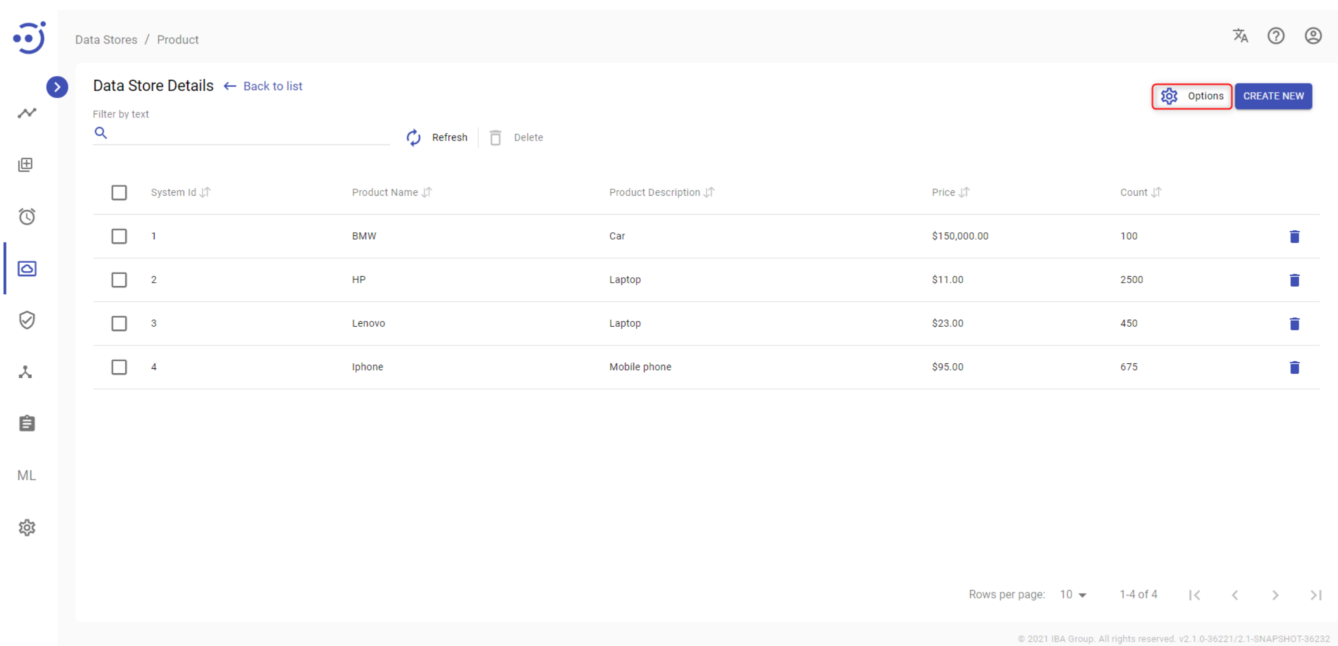
Filtering allows you to search the record by all columns in the table except the System Id column.

Sorting

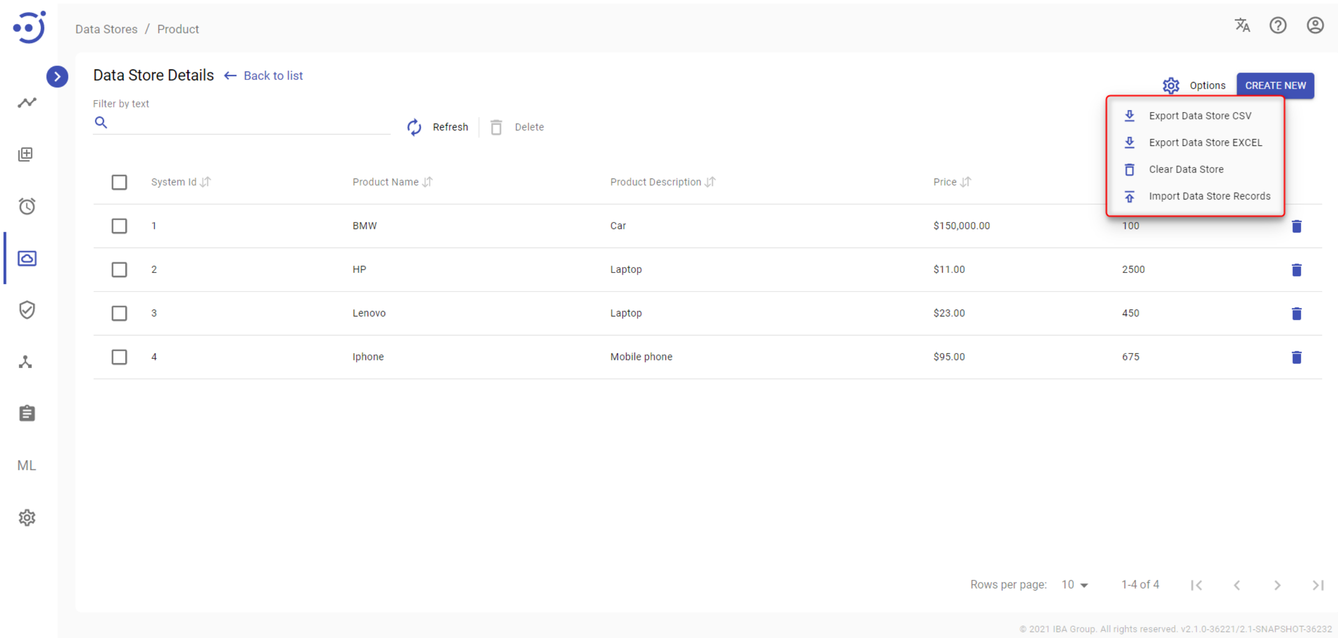
Ascending/descending sorting is allowed for all columns.

Options to Data Store

For additional actions with the datastore, click on the **Options** in the upper-right corner.



After clicking on the button a list of actions, that can be applied to this datastore, will be displayed.



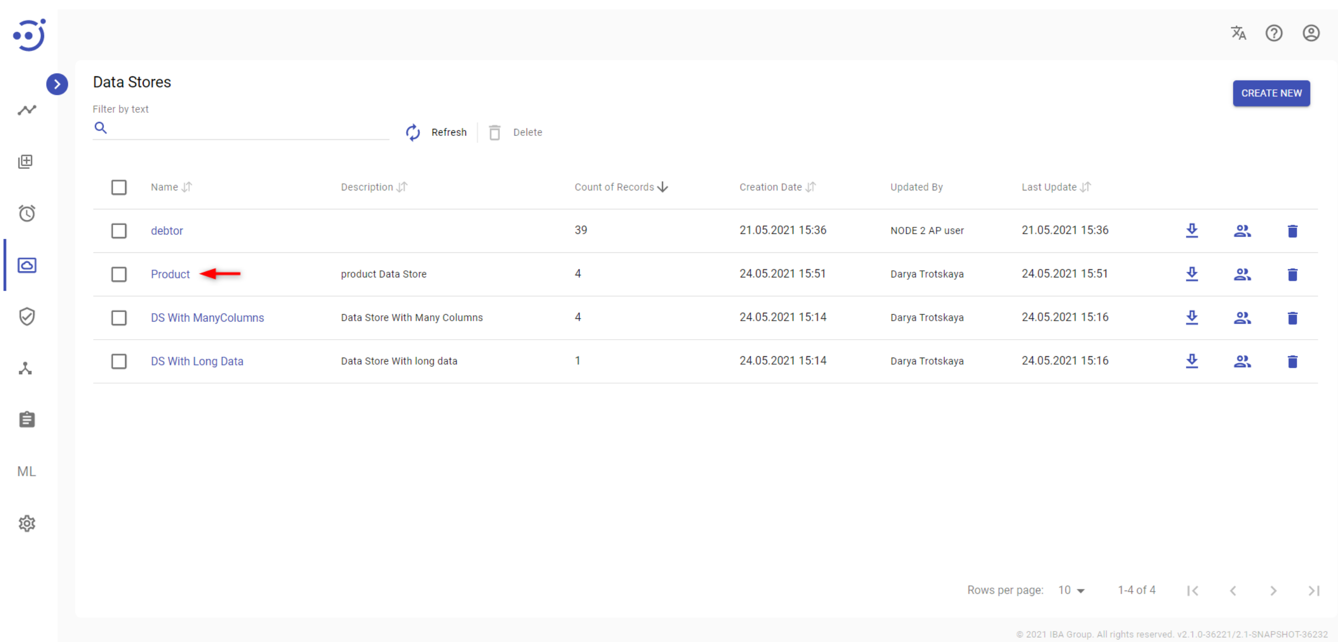
- **Export Data Store CSV** - to download existing records from the Data Store in CSV file.
- **Export Data Store EXCEL** - to download existing records from the Data Store in EXCEL file.
- **Clear Data Store** - to delete all records in the Data Store.
- **Import Data Store Records** - to upload a file with additional records to the Data Store.

Add New Records to Data Store

There are 2 possible ways to add New Records to the already existing Data Store:

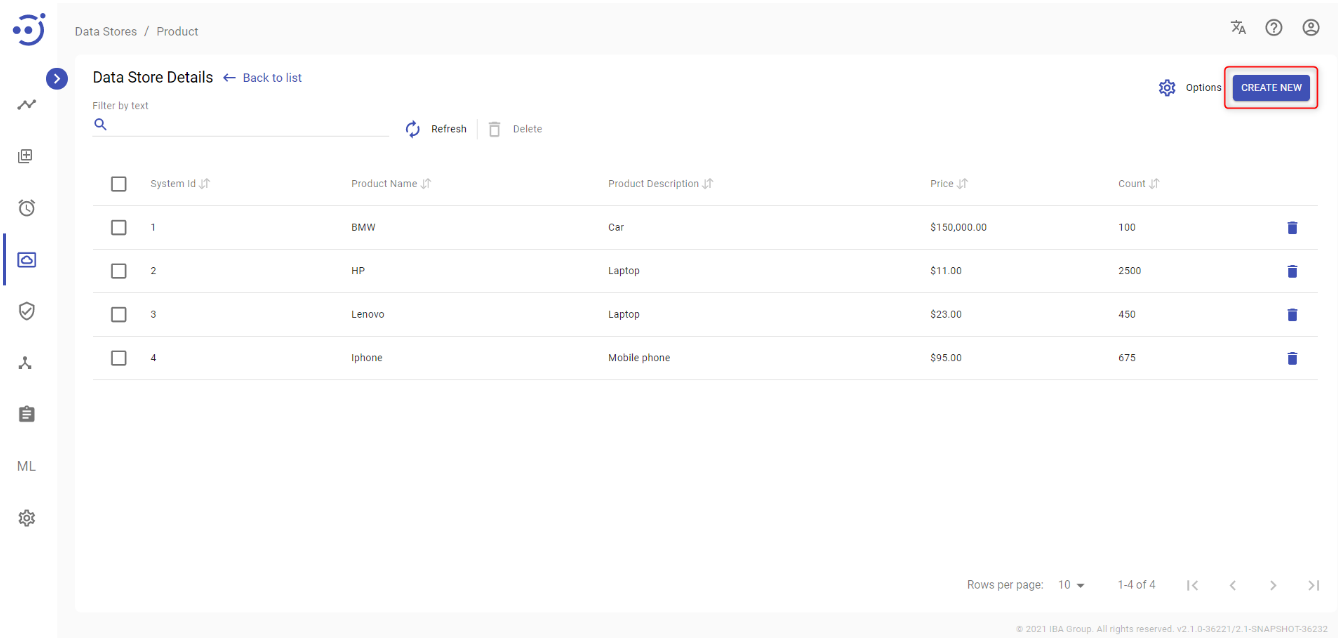
- Add New Records manually - to add records manually one by one. See Add New Records manually.
- Upload a CSV file - to upload with multiple records. See Upload a file to Data Store.

In both cases, firstly you should open the existing Data Store by clicking its name:

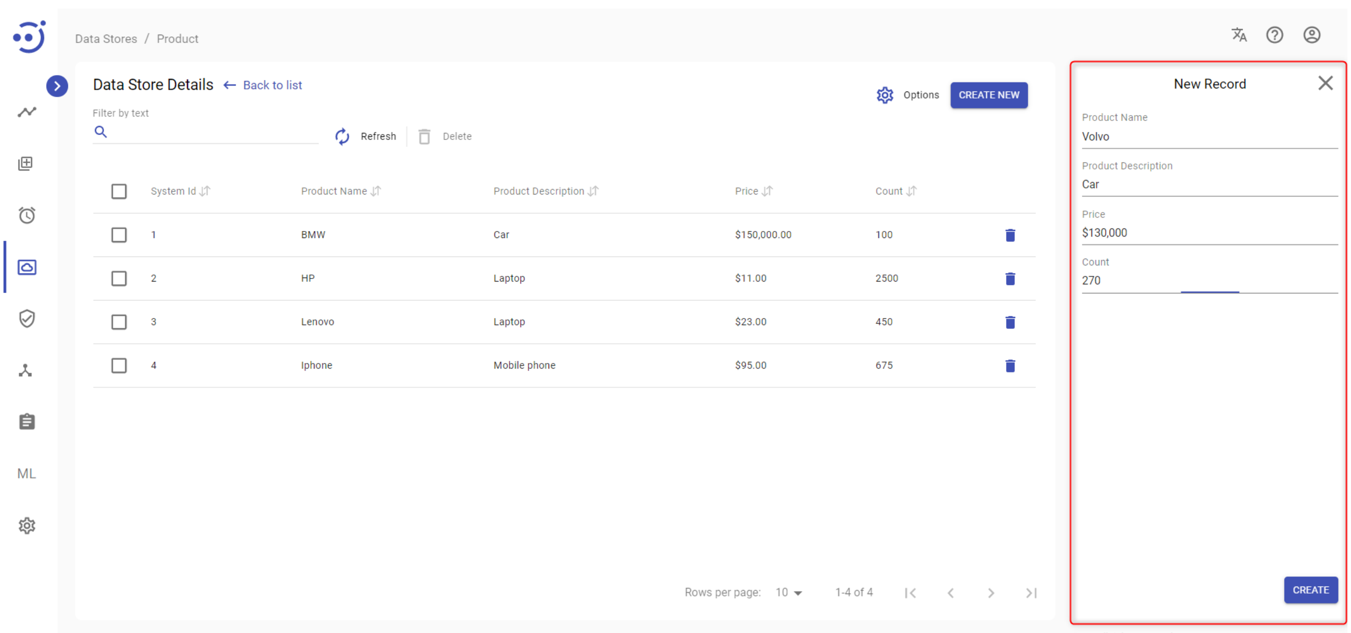


Add New Records manually

1. Click **CREATE NEW**:

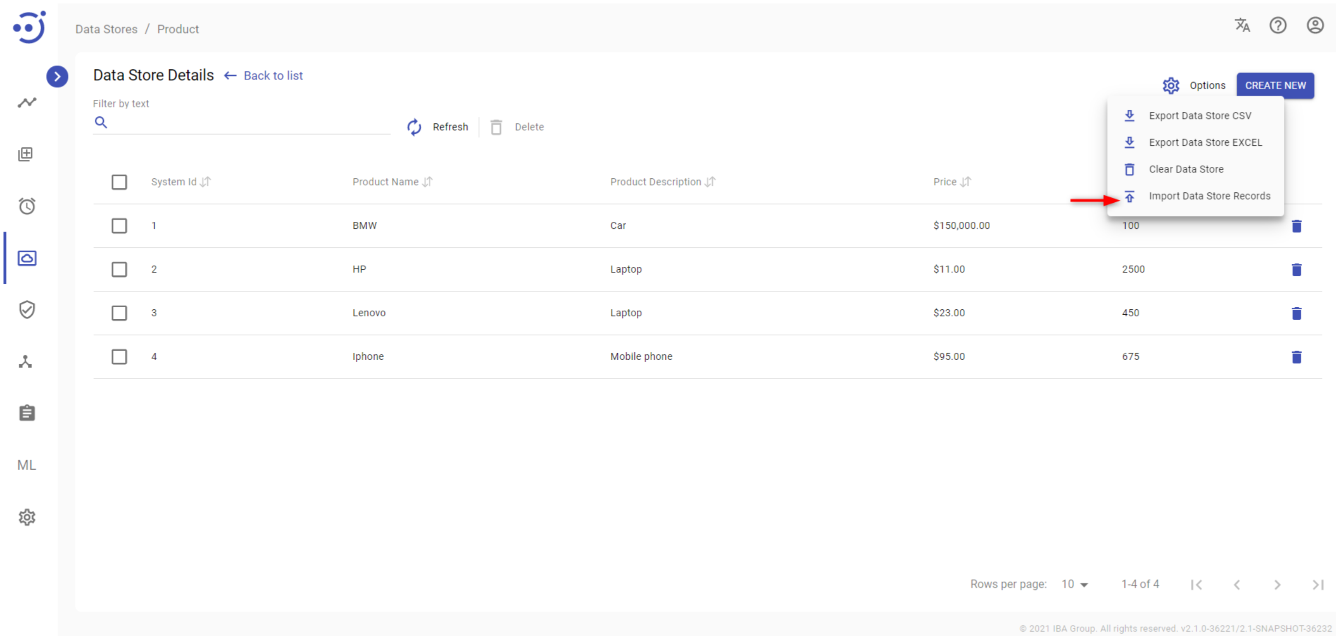


2. Enter values to each column header field in the **New record** popup panel and click **CREATE**:

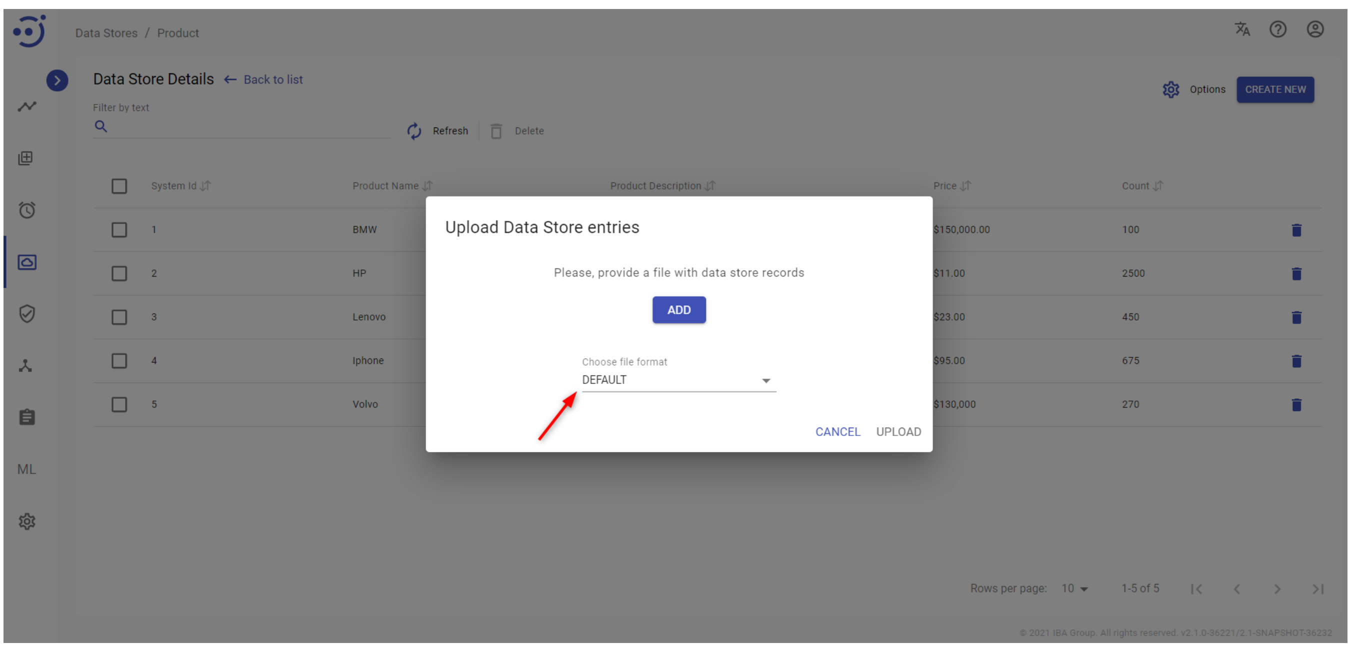


Upload a file to Data Store

1. Click **Options** and select **Import Data Store Records**:

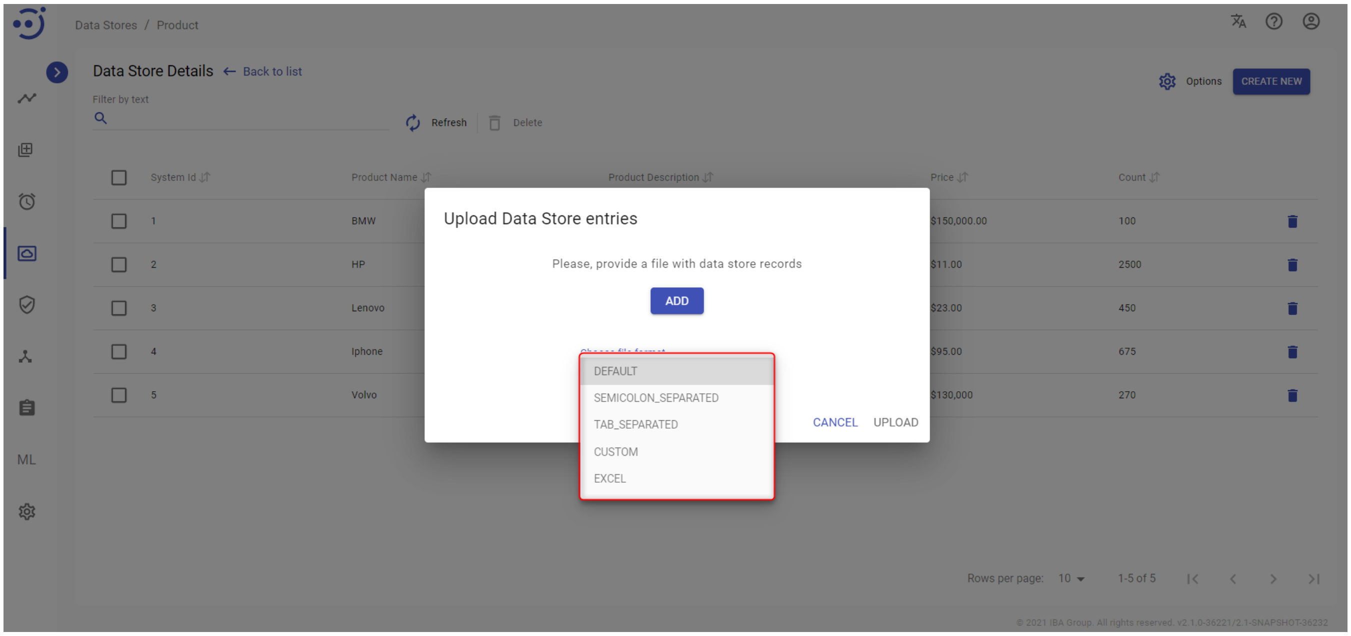


2. Choose file format:

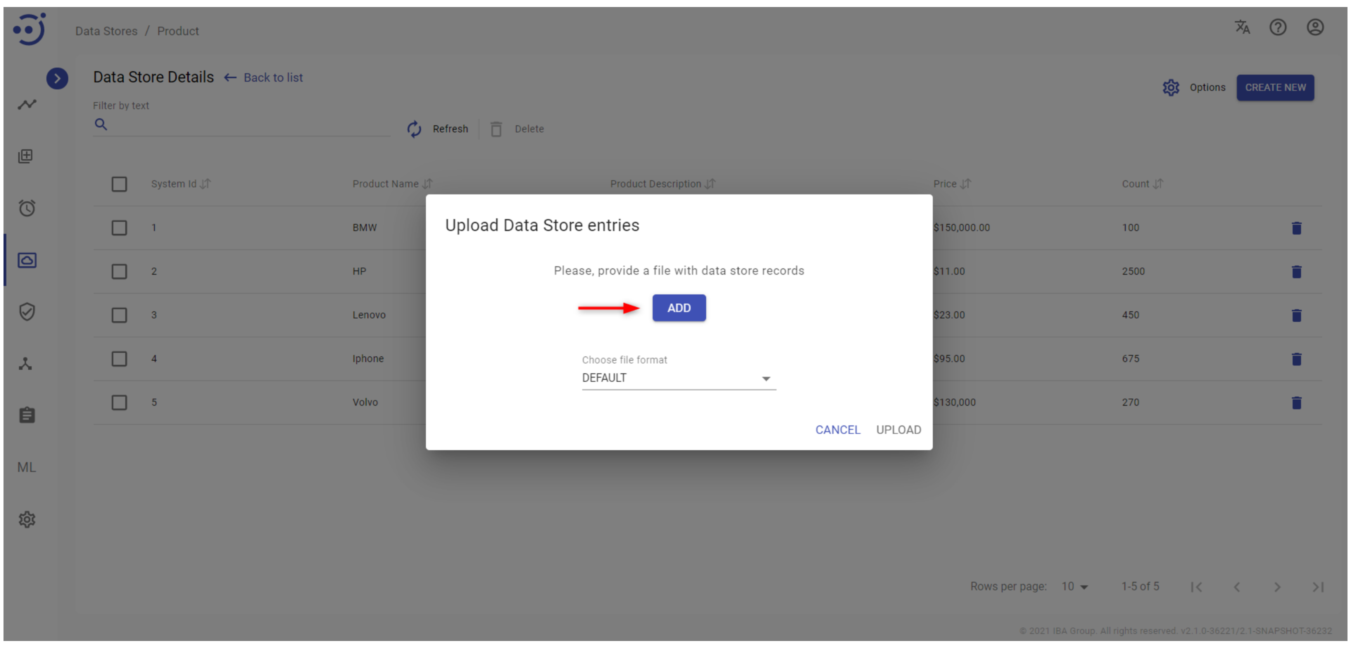


File format settings:

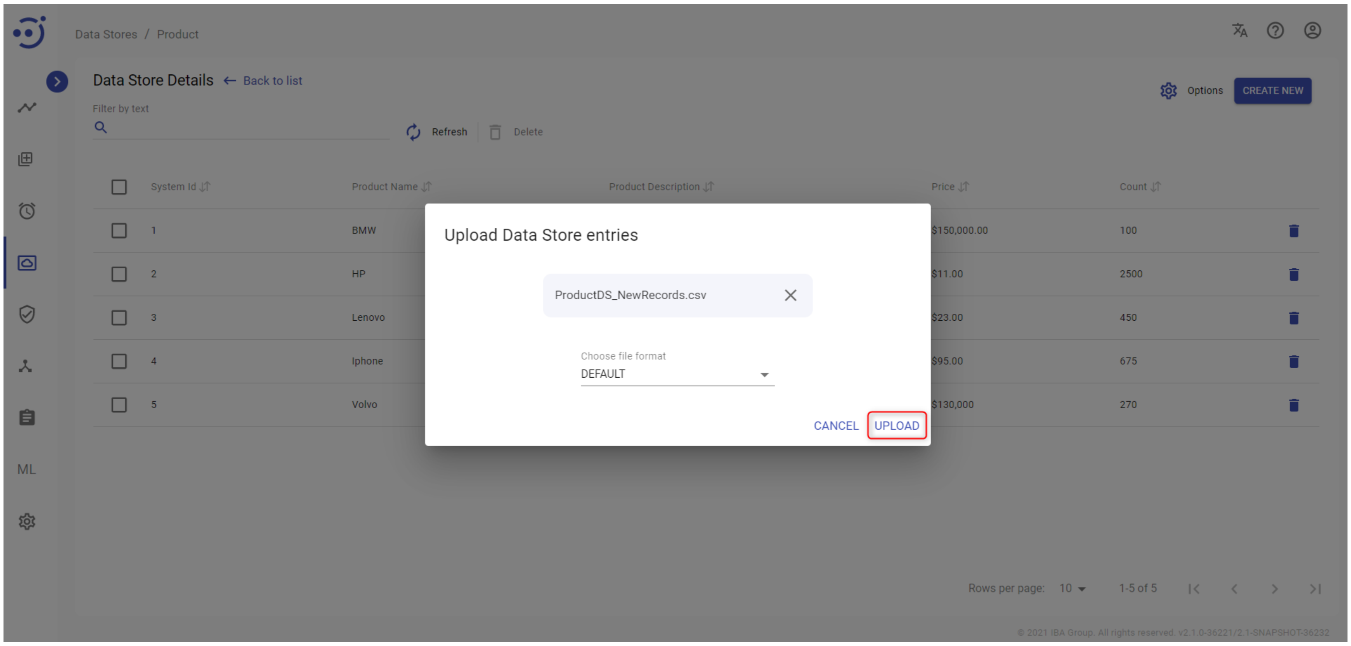
- DEFAULT - CSV file as a delimiter comma (,)
- SEMICOLON_SEPARATED - CSV file as a delimiter semicolon (;)
- TAB_SEPARATED - CSV file as a delimiter tab (\t)
- CUSTOM - CSV file as a delimiter comma (,) other options - for advanced user.
- EXCEL - Excel file in *.xlsx format. ⚠️ For correct import excel file use text format.



3. Click **ADD** to select file:



4. Click **UPLOAD** for load the file:

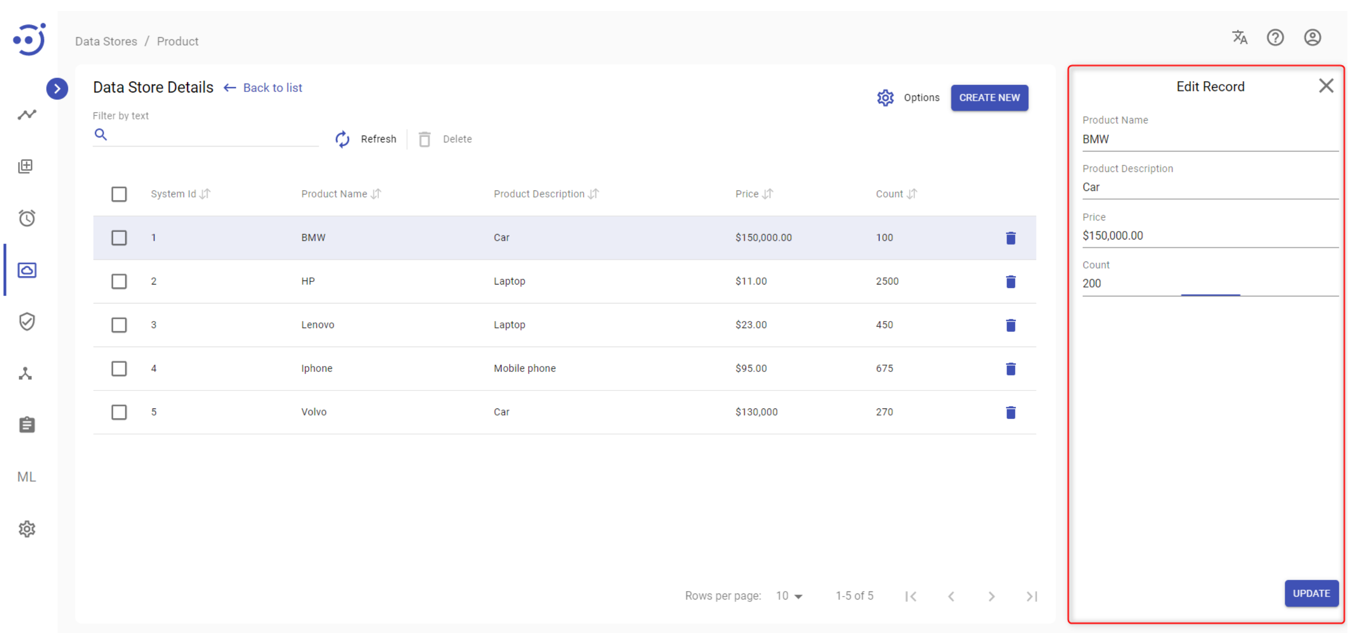


⚠️ The column headers in the chosen file should be the same as in the existing Data Store to be mapped properly. Only the values with the same column headers will be added to the Data Store, the other will stay blank. If no match in column headers will be found, then empty records will be added to the Data Store.

View/Edit an existing Record in Data Store

To update an existing Record, you need to:

- Click on the corresponding Record.
- Change one of the field values in the **Edit Record** popup panel.
- Click **UPDATE**.



(v. 2.2) Secret Vault

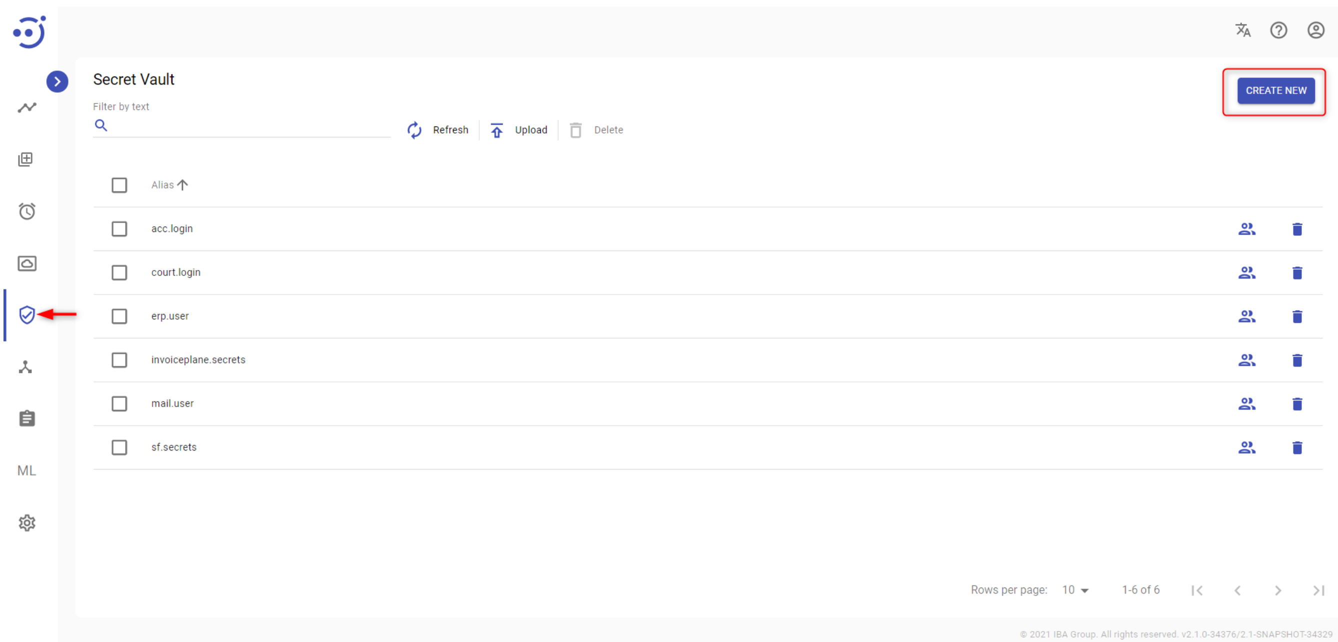
EasyRPA Control Server provides Secrets Vault functionality intended for storing sensitive data (i.e., login, password).

To navigate to Secret Vault module and view the list of secret vault entries, you need to be granted SecretVault-READ. To get Secret Vault details, you need to be granted SecretVault-READ permission. See (v. 2.2) Role Permissions.

Create a New Secure Entry

To create a new secret entry:

1. Go to the Secret Vault module and click **Create New**.



2. In the **New Secret Entry** pop-up panel:

- Enter a unique **alias** to distinguish the secret entry.
- Enter **value**. The user can create new entries by adding sensitive data both in *TEXT* and *JSON* format.

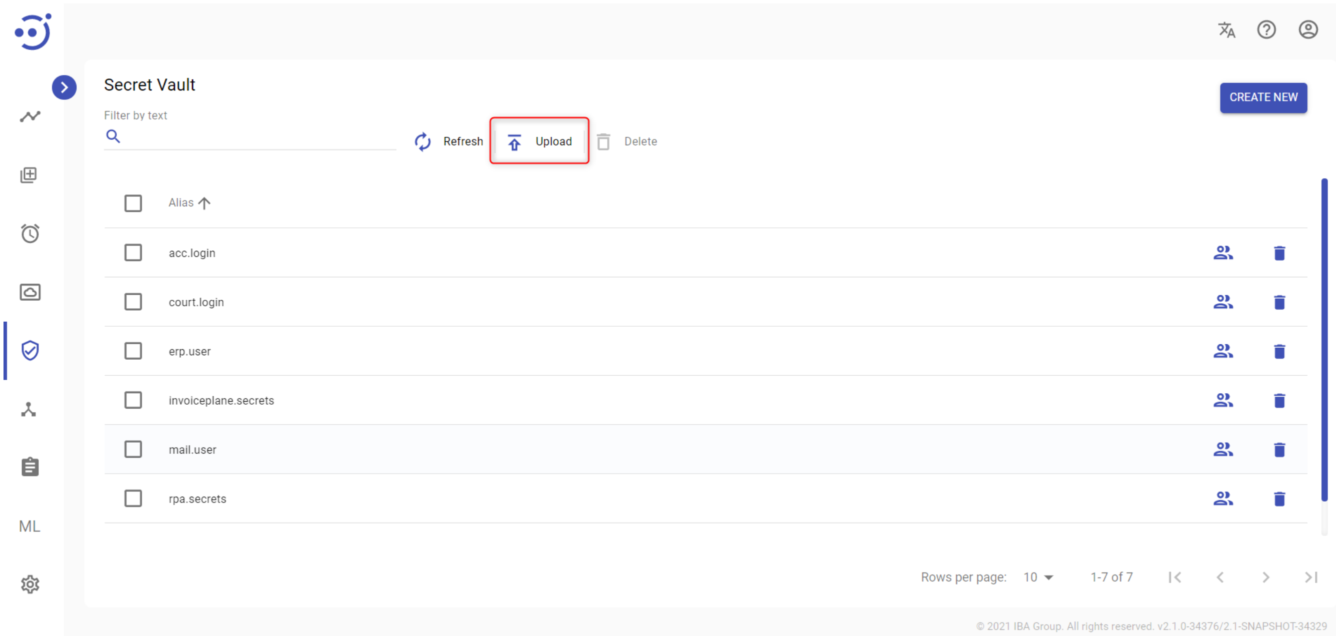
3. Click the **Create** button.

To create a new Secret Vault entry, you need to be granted SecretVault-CREATE permission. See (v. 2.2) Role Permissions.

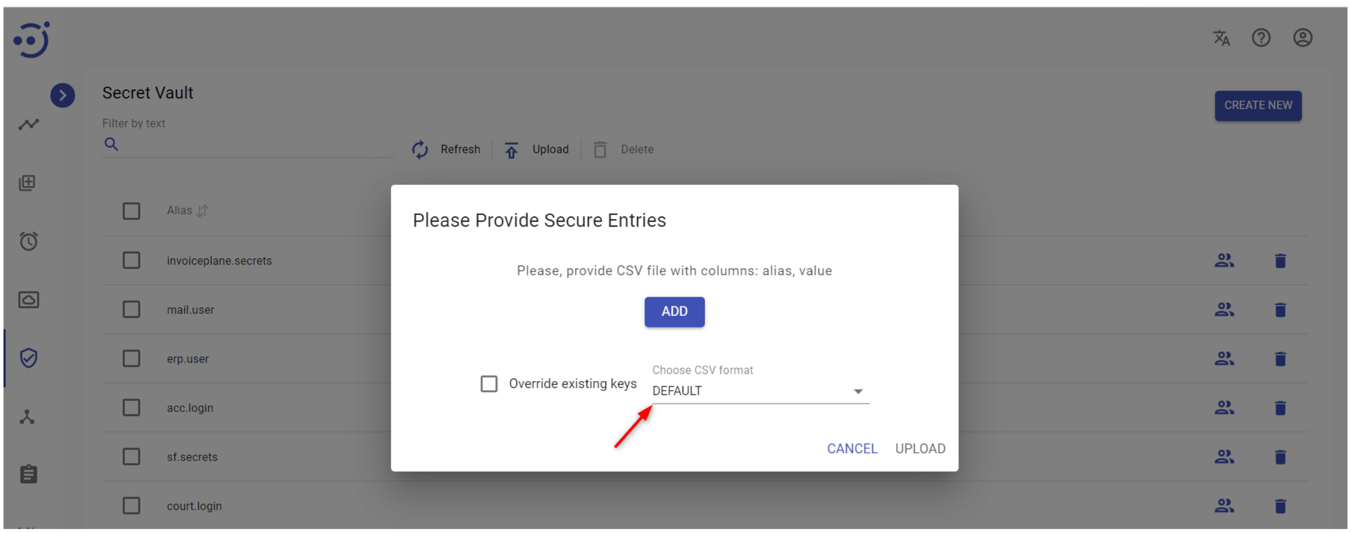
Upload a New Secret Vault Entry

The other way to create the secret vault is to **Upload File** with secure entry in CSV format:

1. Click **Upload File**

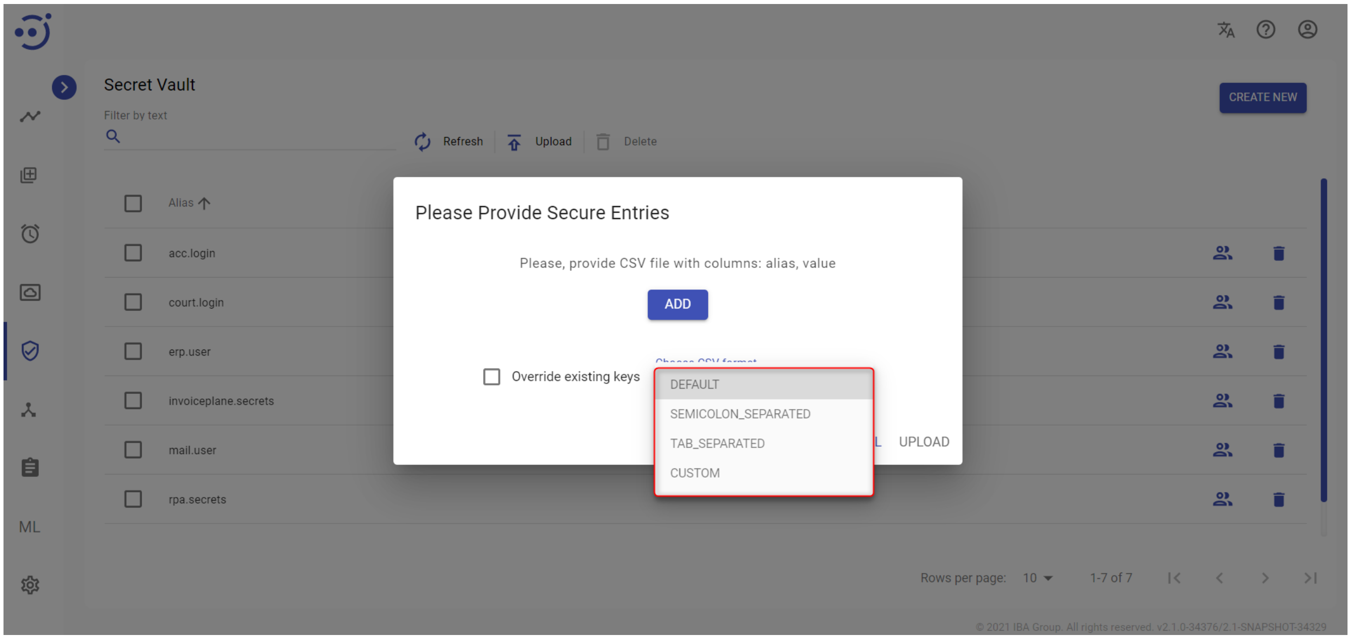


2. Choose CSV format:



CSV format settings:

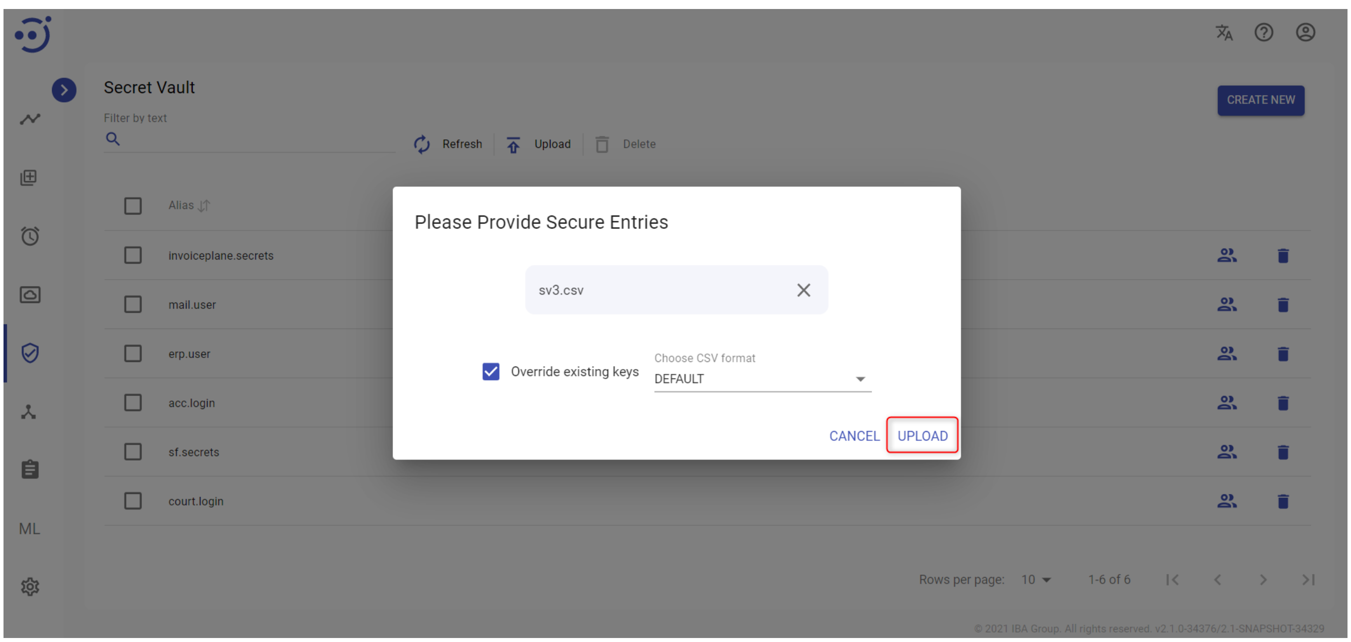
- DEFAULT - CSV file as a delimiter comma (,)
- SEMICOLON_SEPARATED - CSV file as a delimiter semicolon (;)
- TAB_SEPARATED - CSV file as a delimiter tab (\t)
- CUSTOM - CSV file as a delimiter comma (,) other options - for advanced user.



3. Click **Add** to select CSV file and provide CSV file with columns: alias, value.

4. Please, use Override existing keys checkbox if needed.

5. Click **Upload** for load the file:

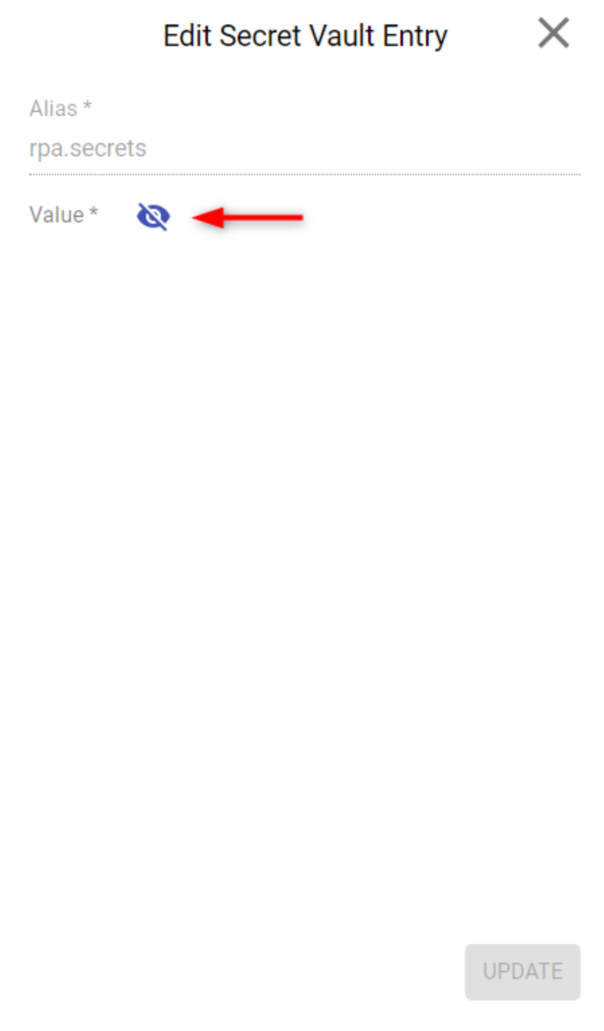


To upload a secret vault entry, you need to be granted SecretVault-CREATE permission. See (v. 2.2) Role Permissions.

View/Edit an Existing Secure Entry

To view or edit the information about a particular secret entry, edit **value** field provided at the information pop-up and click the **Update** button.

Please, use eye icon for switch on visibility of secret entry.

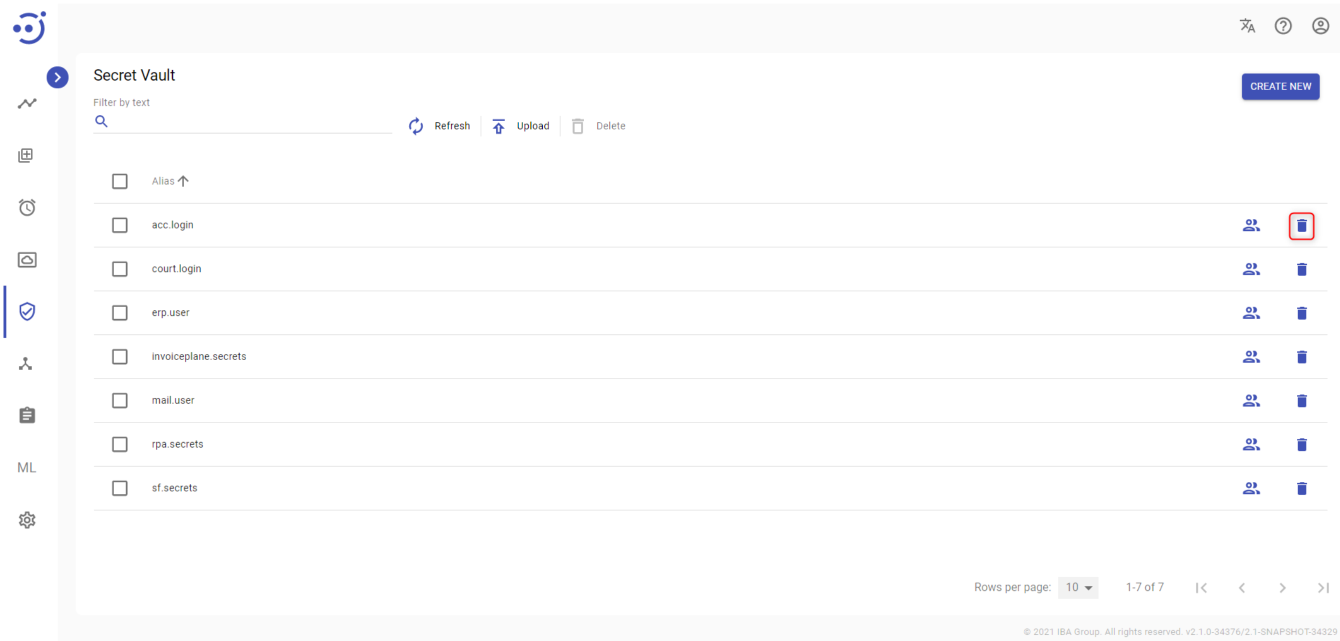


⚠ Once the secret vault entry created, **alias** cannot be modified.

To update an existing secret vault entry you need to be granted SecretVault-UPDATE permission. See (v. 2.2) Role Permissions.

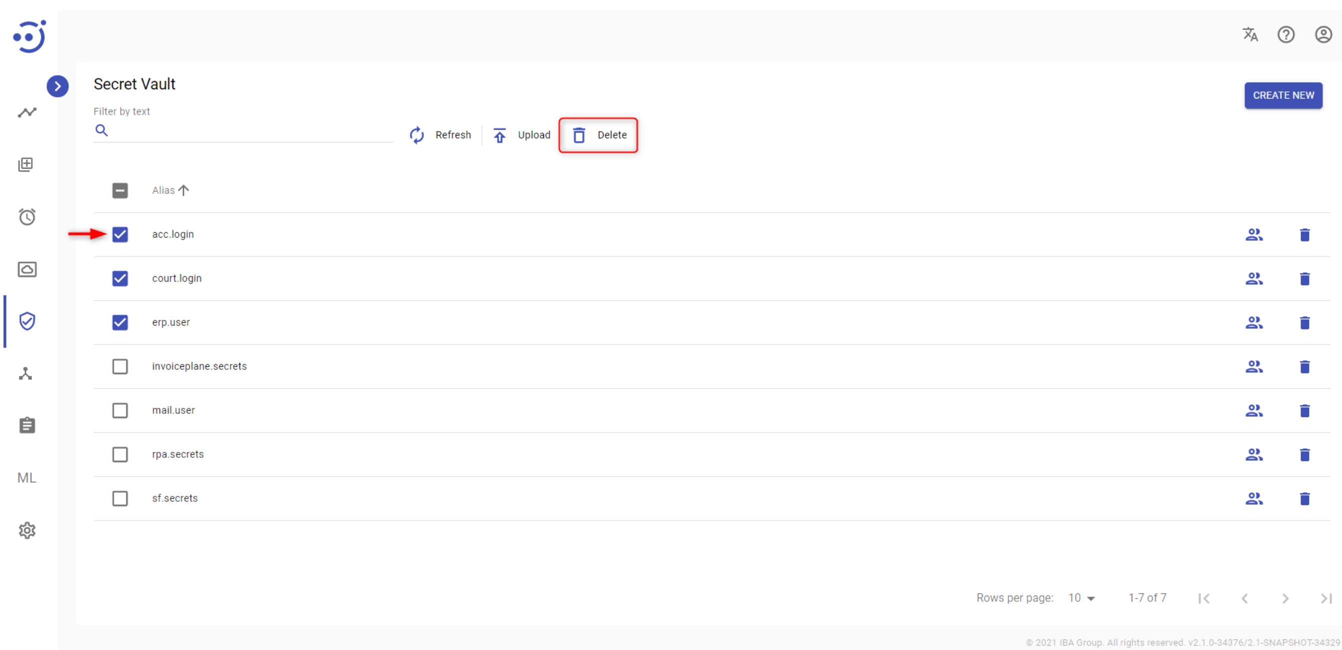
Delete an Existing Secure Entry

To delete the secret entry, use the recycle bin control icon. Required Permission: SecretVault-DELETE. See (v. 2.2) Role Permissions.

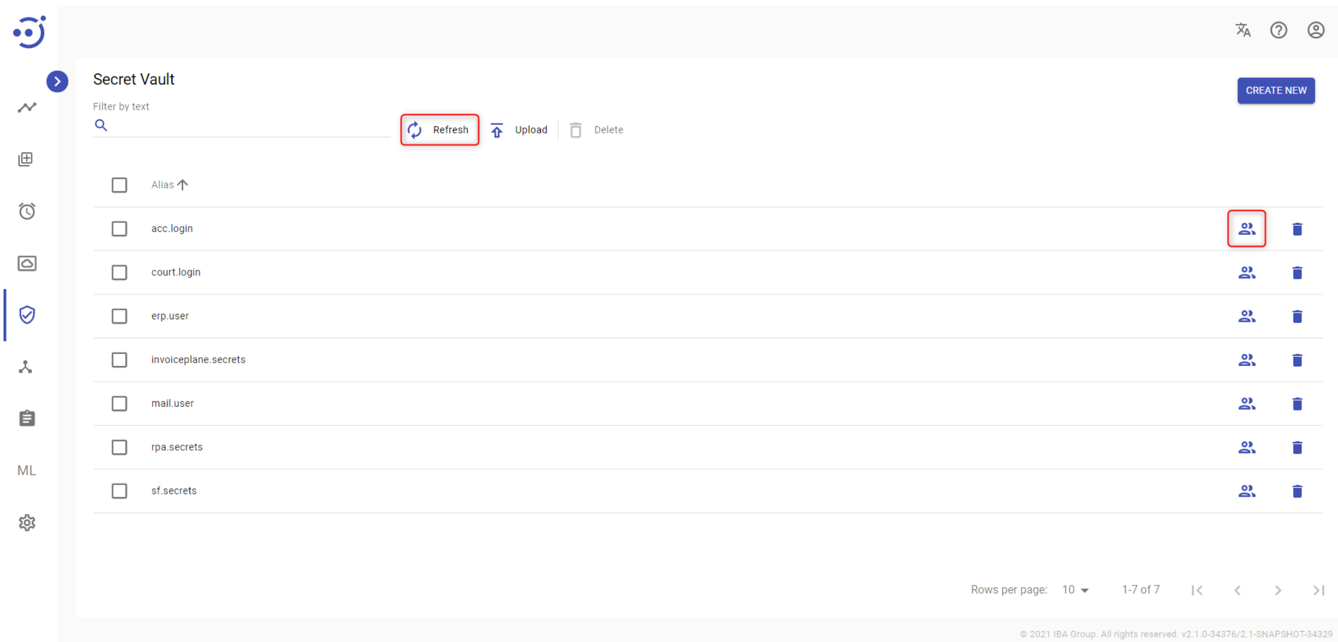


To delete multiple secret entry, you need to:

- Put a tick next to the required secret entry.
- Click **Delete.**



Control icons



- **Refresh** - to pull the last updates from the server.
- **Security Access** - See Security Access.

Filter by text

Filtering allows you to search the Secret Vault by Alias column.

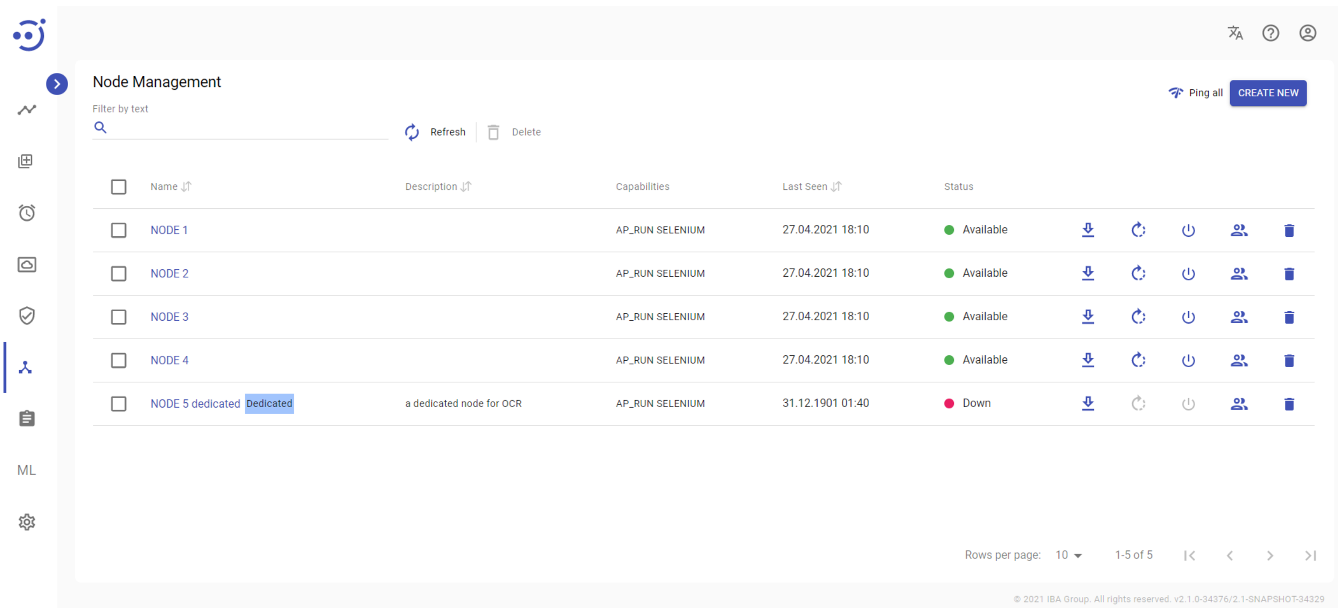
Sorting

Ascending/descending sorting is allowed for the Alias column.

(v. 2.2) Node Management

- Manage existing Nodes
- Edit an existing Node
- Create and configure a new Node

The Node Management module displays a catalog of the available nodes defined by the system. EasyRPA Node is a place where automation processes perform, it can be the same machine as for Control Server or a remote one.



To access the Node Management module, you need to be granted Node-READ permission. See (v. 2.2) Role Permissions.

Manage existing Nodes

The EasyRPA control server allows managing the node catalog.

Columns Description

- Name - the node name.
- Description - a short description of the node.
- Capabilities - the list of capabilities offered by the node for the automation processes execution.
- Last Seen - the last date and time when the node was Available.
- Status - the status of the node (Available/Down/Busy).

Filter by text

Filtering allows you to search the node by its name, description and Capabilities.

Sorting

Ascending/descending sorting is allowed for the columns: Name, Description, Last Seen.

Control Icons

- **Download node agent package** - Required Permission: Node-ACTION.
- **Restart** - to restart the node. Required Permission: Node-ACTION.
- **Shut down** - to shut down the node. Required Permission: Node-ACTION.
- **Delete** - to delete the node. Required Permission: Node-DELETE.
- **Ping all** - to get the latest state for all the nodes. Required Permission: Node-ACTION.
- **Refresh** - to refresh the page.

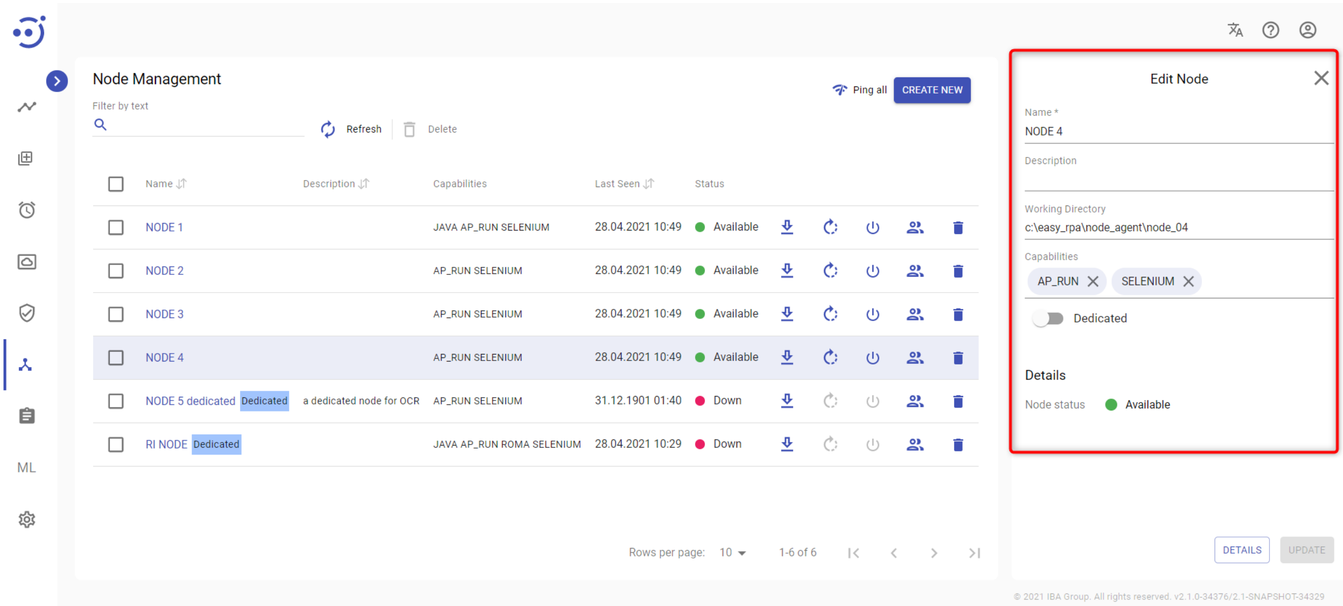
Edit an existing Node

Key information about a particular node is available at the pop-up panel at the right by clicking on the corresponding row with the node. To access the Edit Node panel, you need to be granted Node-READ permission for Node context. See (v. 2.2) Role Permissions.

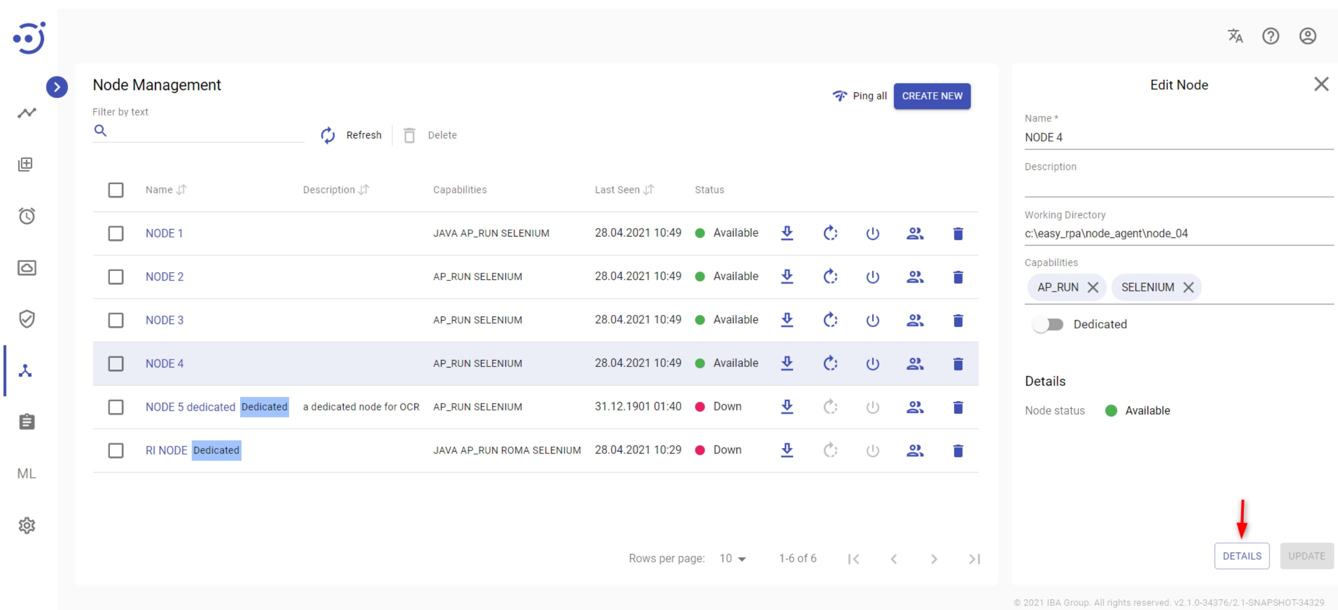
You can edit the displayed fields and save the result by clicking the **Update** button. Required Permission: Node-UPDATE.

The pop-up panel contains the following information:

- Name - the node name.
- Description - a short description of the node functionalities.
- Working Directory - to rewrite the default directory to which the automation process run information is saved.
- Capabilities - the list of capability labels indicating what capabilities the node has.
- Dedicated - the toggle allows you to make the node dedicated. See (v. 2.2) Dedicated Automation Processes.
- Details with Node status



For more information about the node - click **Details**. Required Permission: Node-READ.



Create and configure a new Node

Read more about how to create and configure a new node in **Node agent installation**.

(v. 2.2) Node Details

- Details
- Configuration Parameters
- Runs
- Node features
- Node logs
- Node Status Lifecycle
- Notifications

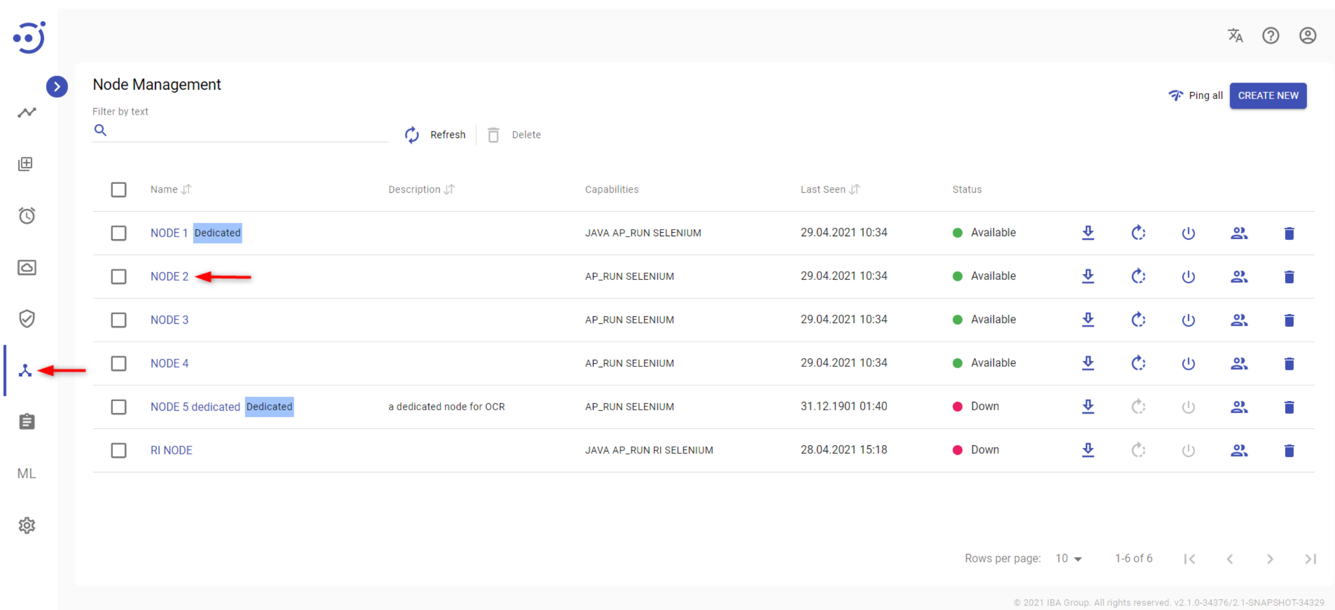
The Node Details page contains general information about node, configuration parameters for this node, automation processes executed on this node, features, and logs. You can view/edit node details, configuration parameters and manage automation process runs. To access the Node Details, you need to be granted Node-READ permission. See Role Permissions .

Details

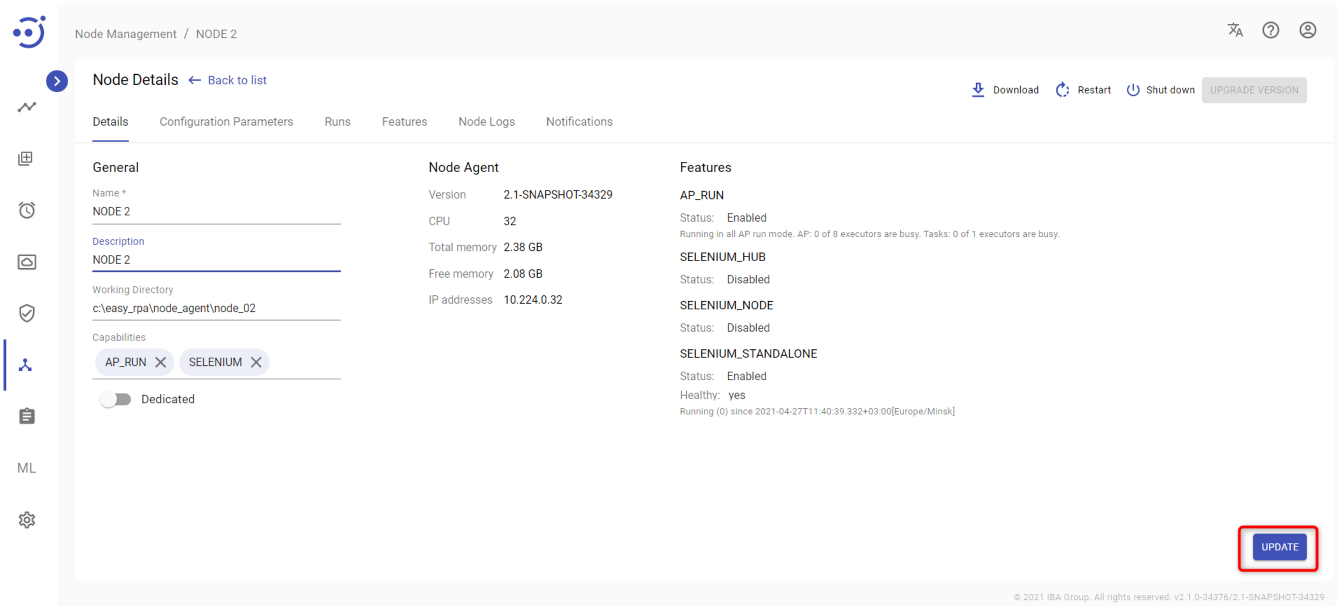
The Details tab displays general settings that are necessary for the Node creation. If at least once the node agent was started and at least once automation process was launched, information about node agent, features and about the last automation process executed on this node is displayed on the tab.

To view/edit node details, you need to:

- Navigate to the **Node management** module.
- Click on the corresponding Node Name.

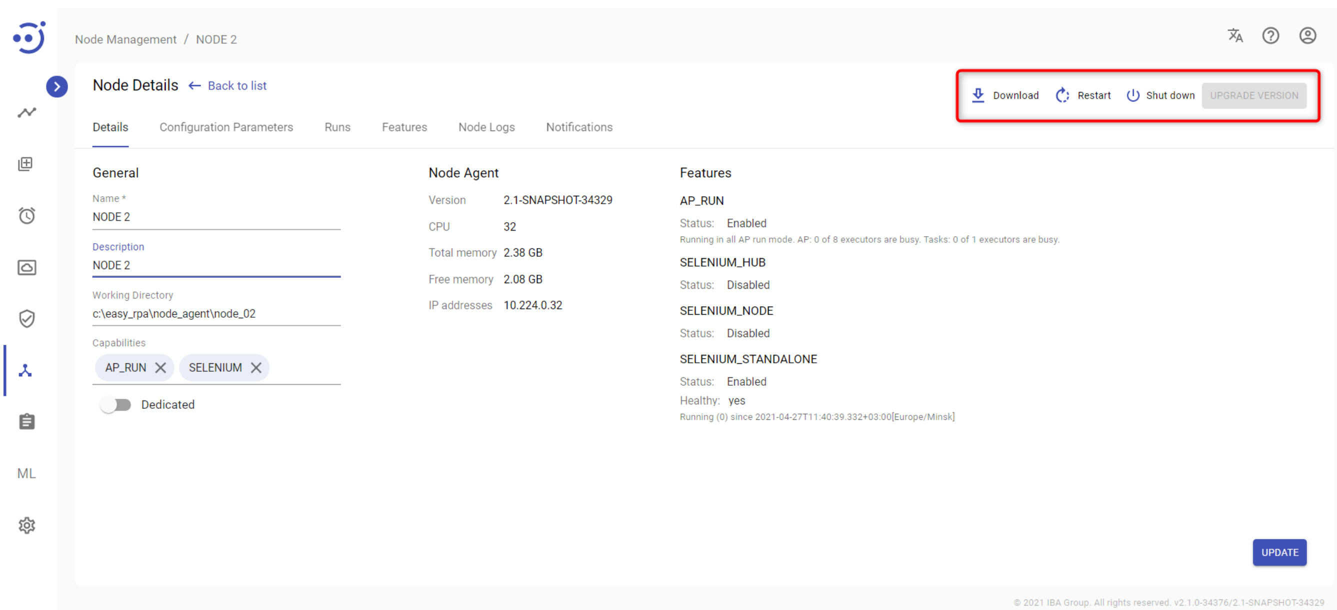


- Change one of the field values.



- Click **Update**.

To update the Node Details, you need to be granted Node-UPDATE permission. See (v. 2.2) Role Permissions.



Control icons

- **Download node agent package** - Required Permission: Node-ACTION.
- **Restart** - to restart the node. Required Permission: Node-ACTION.
- **Shut down** - to shut down the node. Required Permission: Node-ACTION.
- **Upgrade version** - to upgrade node version to Control Server version. Required Permission: Node-ACTION.

Fields Description

General:

- Name - the node name.
- Description (optional) - a short description of the node functionalities.
- Working Directory (optional) - to save drivers and other necessary files for running processes in a specific folder. By default, this is %Temp%\NODE NAME\.
- Capabilities - the list of capability labels indicating what capabilities the node has.
- Dedicated - the toggle allows you to make the node dedicated. See (v. 2.2) Dedicated Automation Processes.

Node Agent:

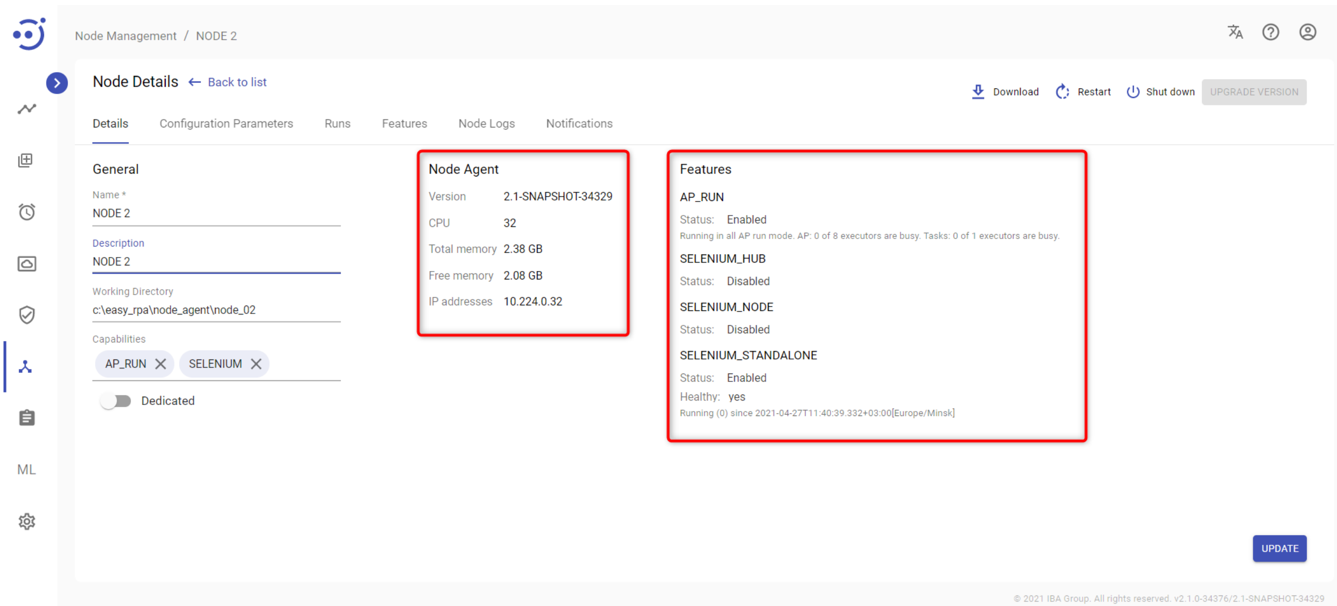
This group of fields represents physical characteristics of the node.

- Version of the node agent
- CPU - bit amount of the node's CPU
- Total memory - memory volume of the node
- Free memory - memory volume available for usage
- IP address - IP address of the node

Features

See Node features for detailed information.

- Feature name
- Status
- Healthy
- Timestamp of run



Configuration Parameters

The Configuration Parameters tab displays the list of node parameters in the form of key-value pairs. Here you can specify the parameters required to start the automation process on the current node.

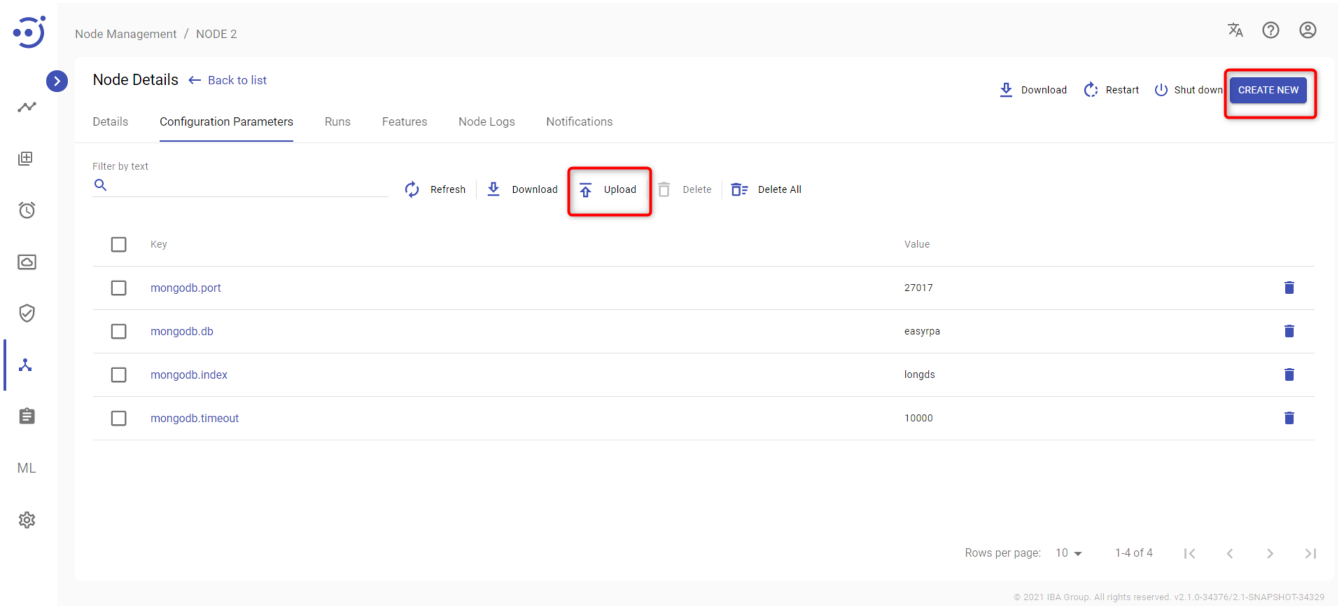
To access the Configuration Parameters, you need to be granted Node-READ permission. See (v. 2.2) Role Permissions.

⚠️ If the same parameter with a different value is present in the CS Configuration and the Automation Process Configuration Parameters modules, the priority is assigned in the following order: Node Configuration Parameter -> Automation Process Configuration Parameter -> CS Configuration Parameter.

Add Configuration Parameter

There are 2 ways to **Add** a new configuration parameter:

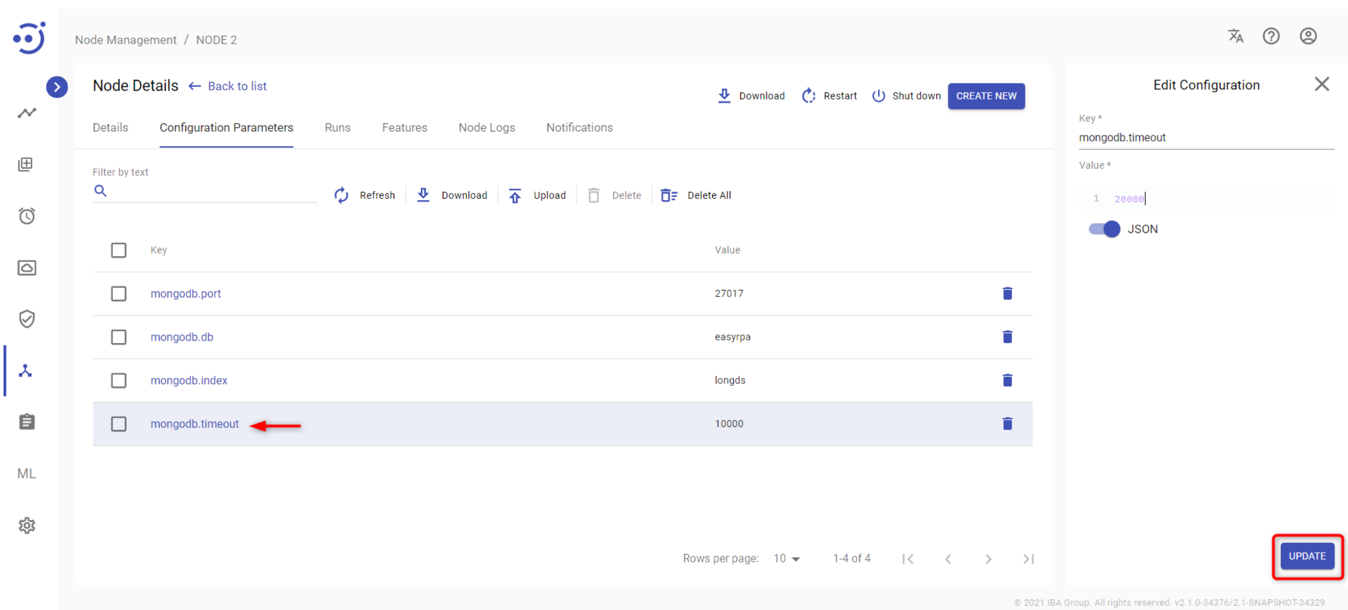
- Click **Create New** and add configuration parameter manually. Required Permission: Node-UPDATE.
- Click the **Upload** icon and import the CSV file. Required Permission: Node-UPDATE.



Update Configuration Parameter

To **Update** an existing configuration parameter, you need to:

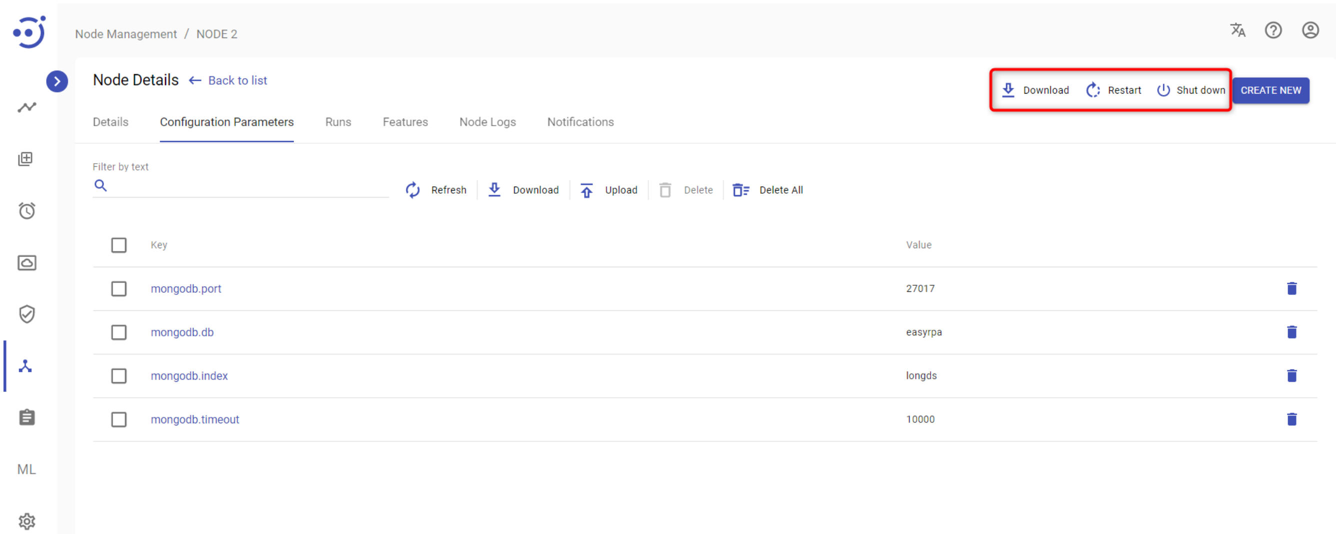
- Click on the corresponding configuration parameter.
- Change one of the field values.



- Click **Update**.

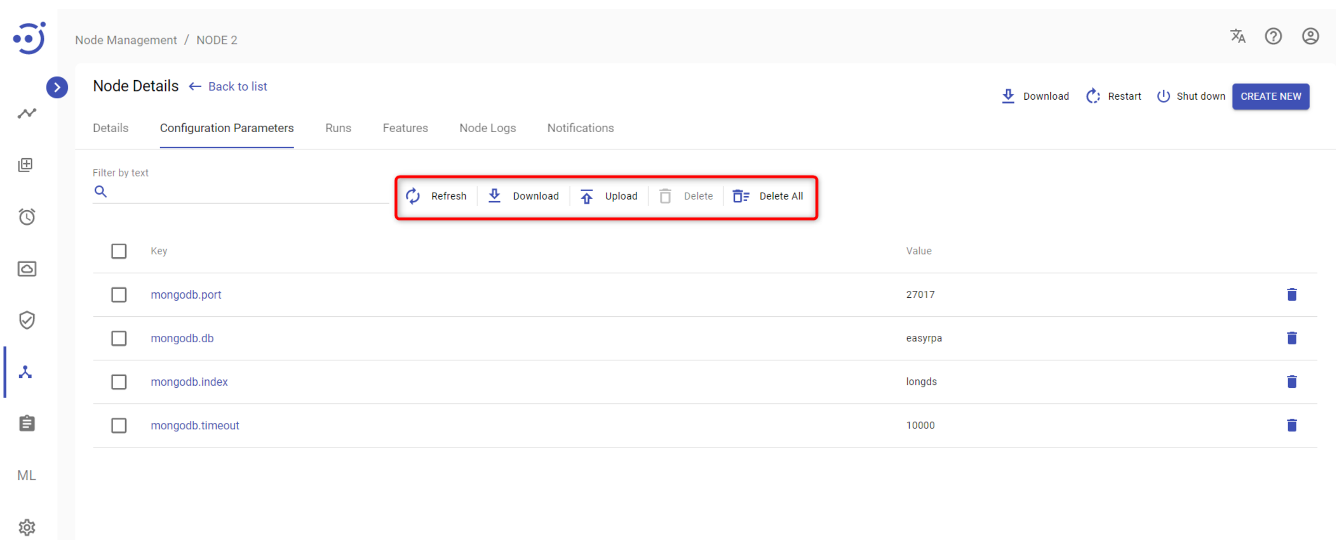
To update the Automation Process Configuration Parameters, you need to be granted Node-UPDATE permission. See Role Permissions .

In the upper-right corner of the Node Details there are Node Control icons that remain the same for all the tabs:



- Download - to download node agent package. Required Permission: Node-ACTION.
- Restart - to restart the node. Required Permission: Node-ACTION.
- Shut down - to shut down the node. Required Permission: Node-ACTION.

There are also tab-specific controls regarding Configuration Parameters:



Control icons

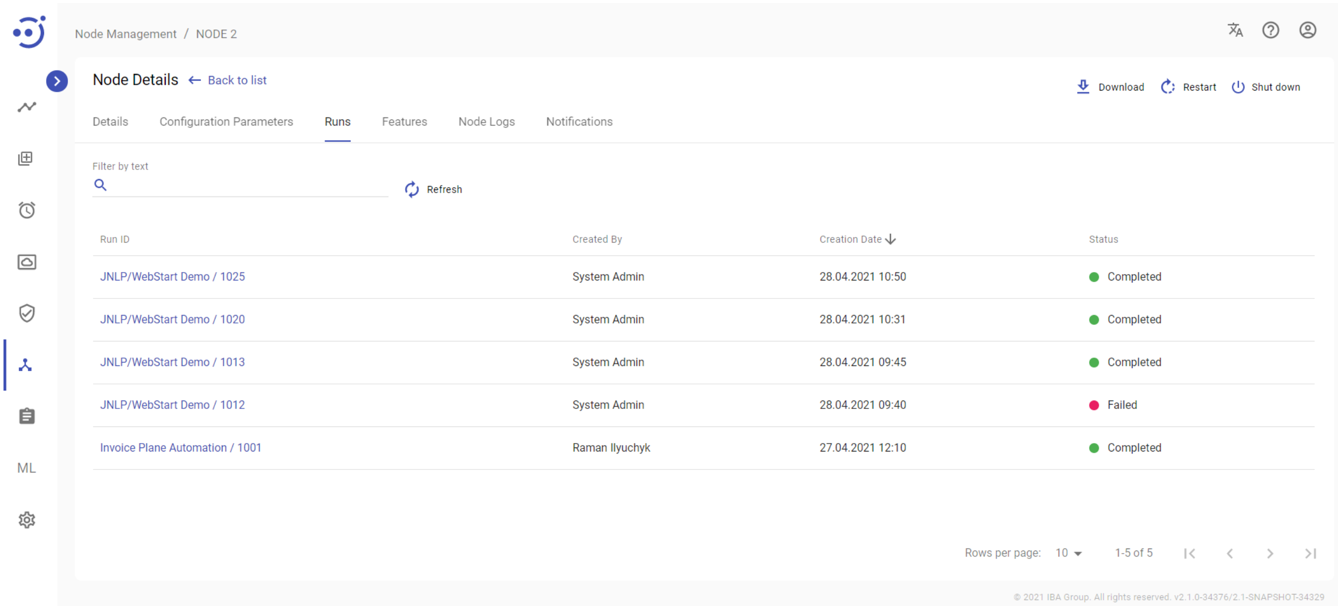
- **Refresh** - to refresh configuration parameters' list
- **Download** - to download existing configuration parameters in CSV file. Required permission: Node-READ.
- **Upload** - to import new configuration parameters from CSV file. Required Permission: Node-UPDATE.
- **Delete** - to delete the configuration parameter. Required Permission: Node-UPDATE.
- **Delete all** - to delete all configuration parameters of this node. Required Permission: Node-UPDATE.

Filter by text

Filtering allows you to search the configuration parameter by Key, Value columns.

Runs

The Runs tab contains information about all the runs that were started on this node and their statuses. You can manage the automation process runs using control buttons. To access the Automation Processes Runs, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.



Columns Description

- Process name / Run ID - the automation process name / numeric identifier of the particular process run.
- Created By - the First and Last names of the user who started the automation process. The automation process runs initiated by the schedule will have System Scheduler value
- Creation Date - the date and time when the Run was created.
- Status - the current status of the Run.

Filter by text

Filtering allows you to search the automation process by its name (Run ID column) and author (Created By column).

Sorting

Ascending/descending sorting is allowed for the Creation Date column.

Related pages

Clicking on the Process name / Run ID value will lead to the "History" page of the selected automation process run. See Automation Process Run for more information.

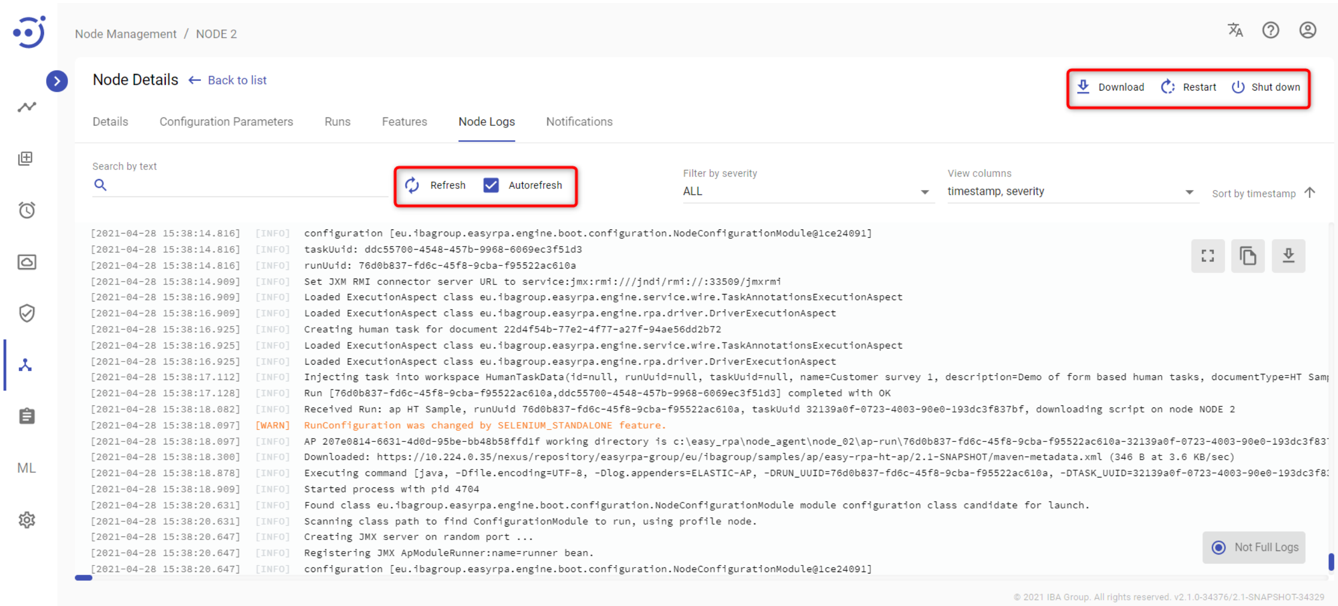
See Automation Process Run Status Lifecycle for more information about the automation process statuses and control icons.

Node features

See Node features for detailed information about this tab.

Node logs

The Node Logs tab displays the logs of the particular node. There are displayed only 10 000 log records (All records can be downloaded in the .txt file). To access the Node Logs, you need to be granted Node-READ permission. See Role Permissions .



Control icons

General:

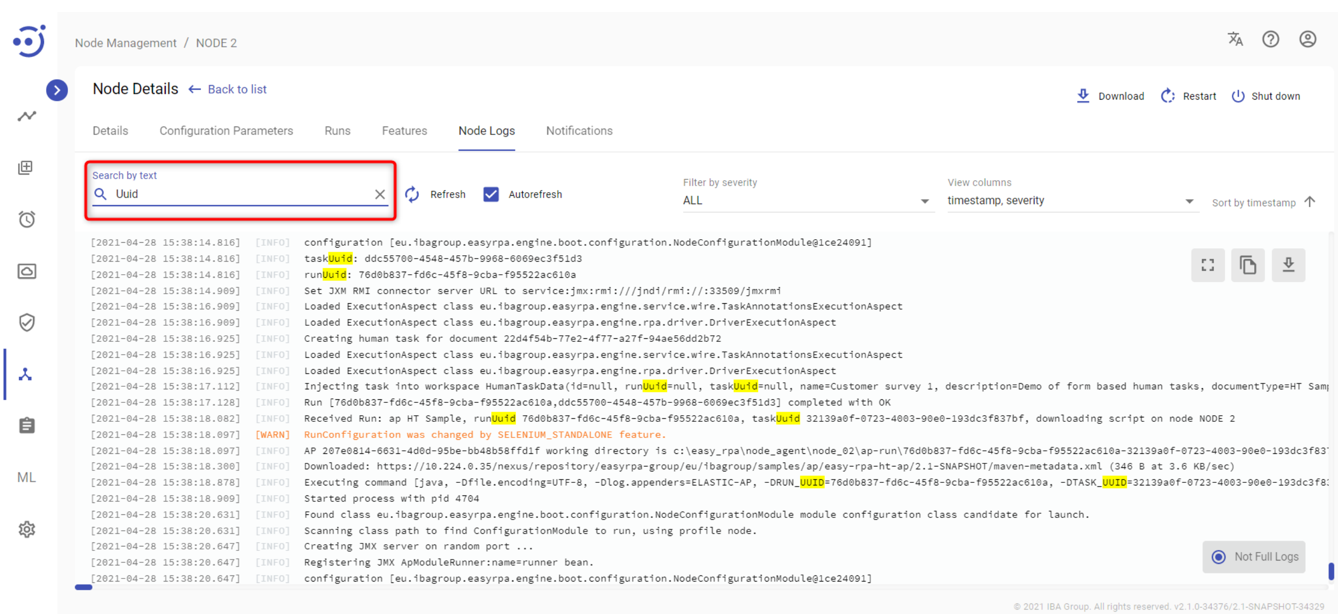
- Download - to download node agent package - Required Permission: Node-ACTION.
- Restart - to restart the node. Required Permission: Node-ACTION.
- Shut down - to shut down the node. Required Permission: Node-ACTION.

Tab-specific:

- Refresh - to pull the latest logs from the server.
- Autorefresh checkbox - to turn on/off an automatic refresh of logs.

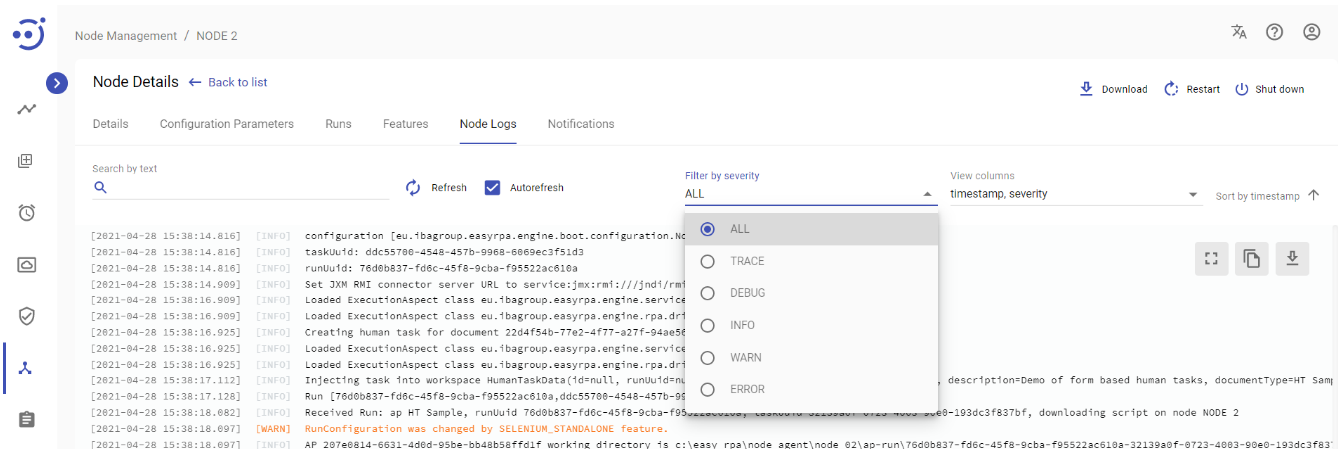
Search by text

You can search for a particular log by its text. The logs found are highlighted in yellow.



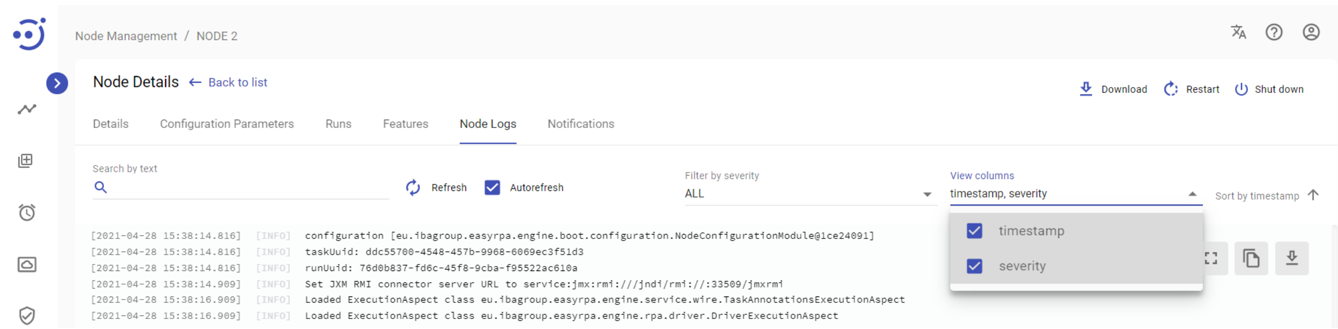
Filter by severity

Filtering allows you to choose the level of severity of the displayed logs from the dropdown menu. The available options are as follows:



View columns

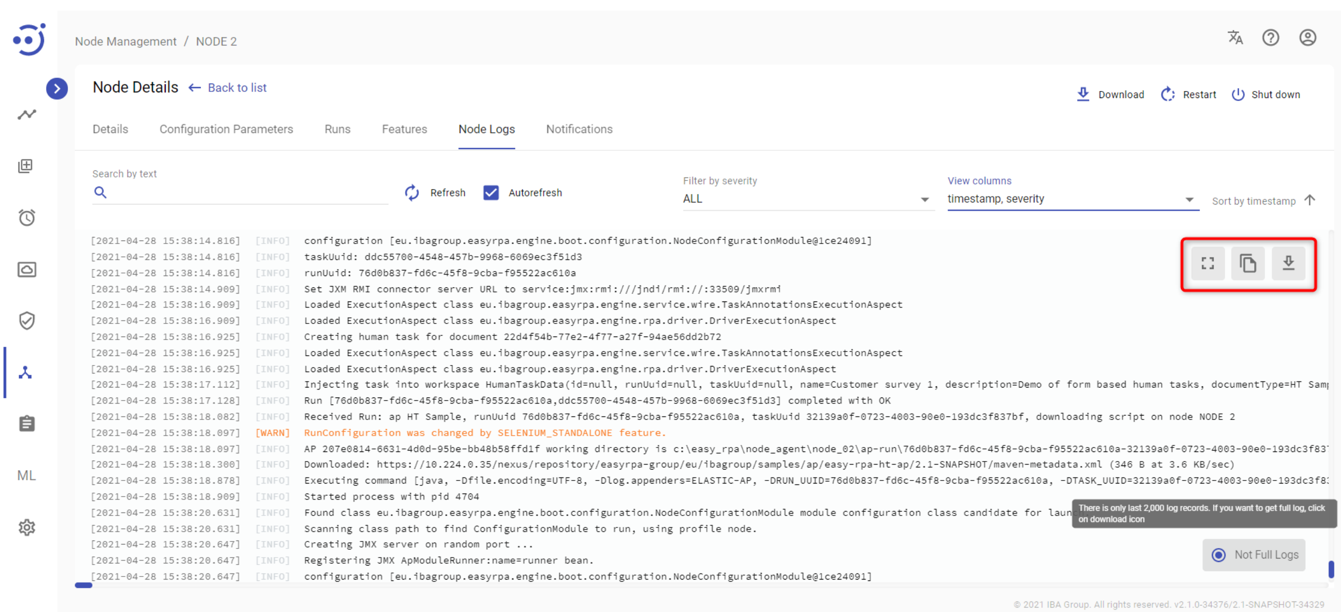
You can add or remove the columns timestamp/severity from the event log view.



Sort by timestamp

Ascending/descending logs sorting by the timestamp is allowed.

In the upper-right corner of the logs window there are buttons for opening logs in the full browser window, copy logs to the clipboard and download a .txt file with logs



The following section describes the life cycle of the node and the corresponding statuses that it may have.

Node Status Lifecycle

- **Available** - describes the state when the node is ready for use (the Node agent is started).
- **Down**- the Node agent was not started.
- **Busy** - describes the state when the automation process is executed on the node.
- **Stopping** - describes a transition state before stop/deletion.

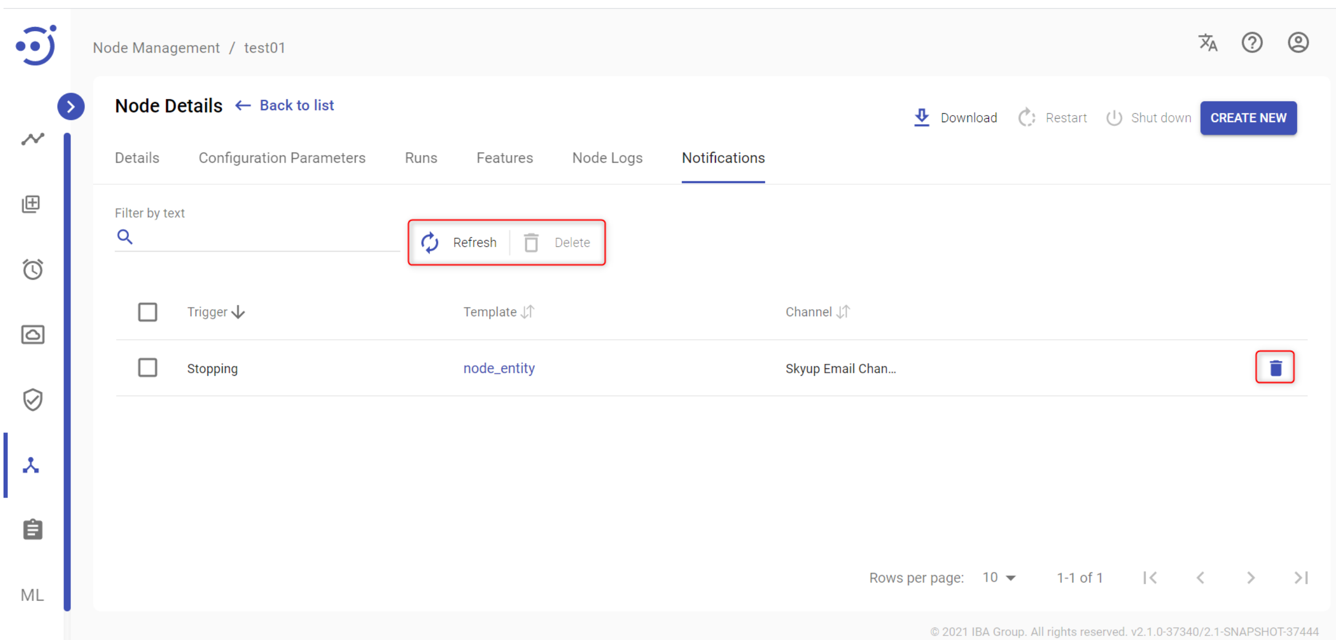
Control icons

The following actions can be applied to the node with corresponding statuses:

	Restart	Shut down	Delete
Available			
Down			
Busy			
Stopping			

Notifications

The Notifications tab allows users to receive messages about a particular AP Run. To access the Notifications, you need to be granted Node-READ permission. See (v. 2.2) Role Permissions.



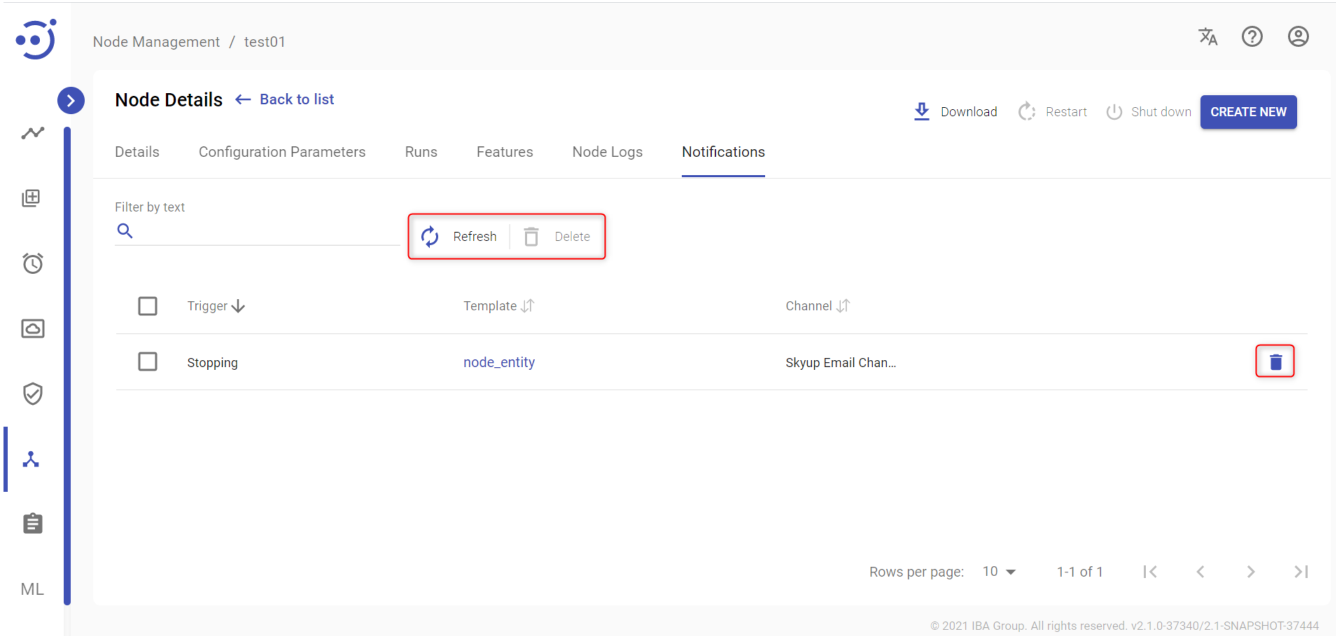
Columns Description

- Trigger - the action for which the message is sent to the particular channel.
- Template - example of a message is sent to a channel.
- Channel - mailing list of contacts.

Control icons

- Refresh - to refresh the page.
- Delete - to delete Notifications.

Required Permission: Node-UPDATE.



Filter by text

Filtering allows you to search the automation process by **Trigger, Template and Channel**.

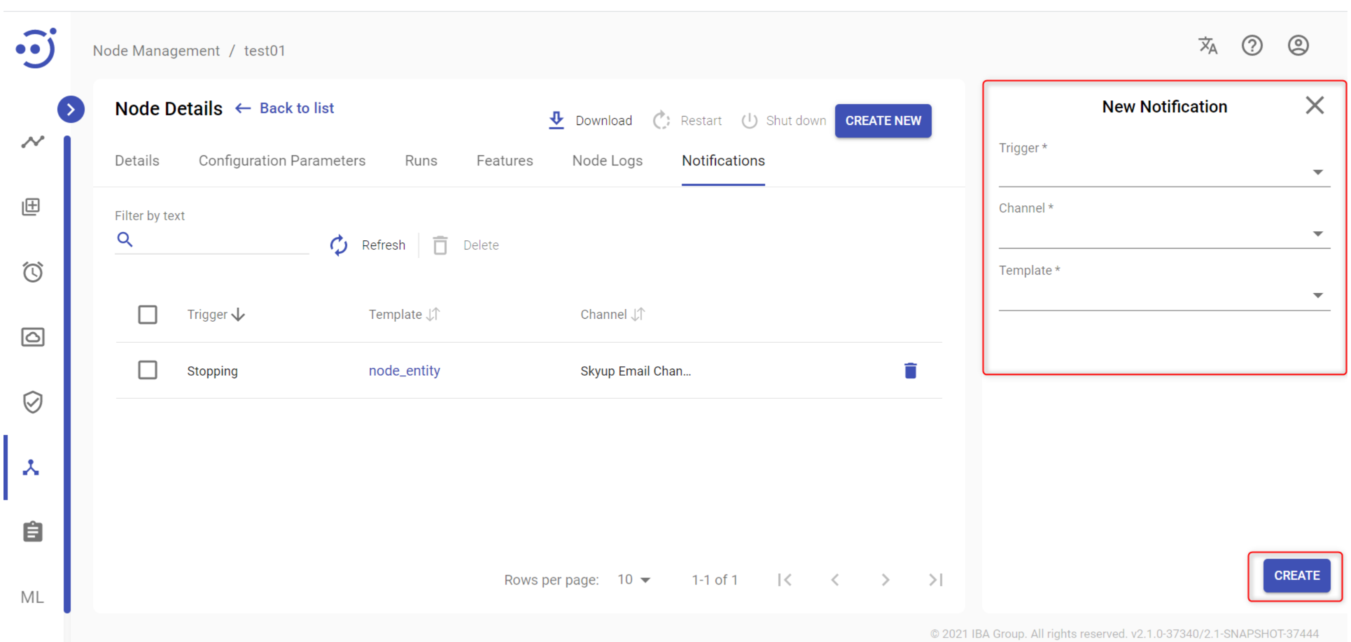
Sorting

Ascending/descending sorting is allowed for the **Trigger, Template and Channel columns.**

Create a New Notification

To create a New Notification:

1. Click **"Create New"** button.
2. In the New Notification pop-up panel enter **Trigger, Chanel, Template.**
3. Click **CREATE.**

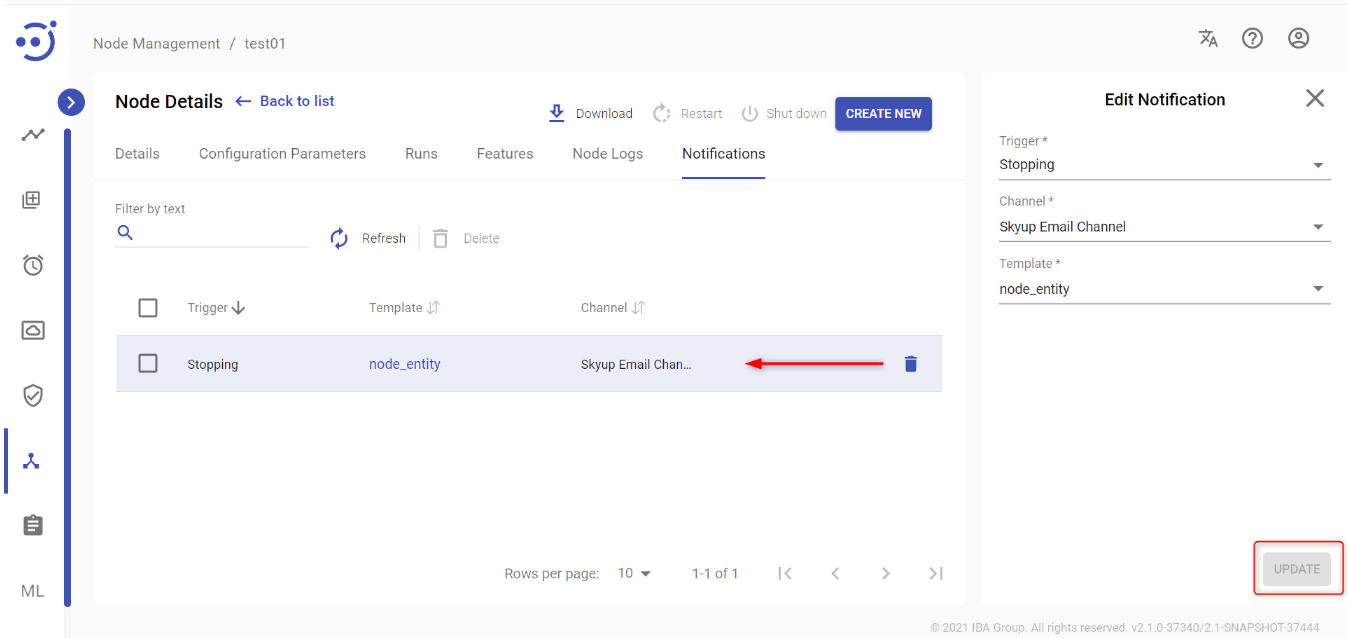


To create the Schedule Notifications, you need to be granted Node-UPDATE permission. See (v. 2.2) Role Permissions.

Update Notifications

To **Update** an existing notification parameters, you need to:

- Click on the corresponding notification.
- Change one of the field values.



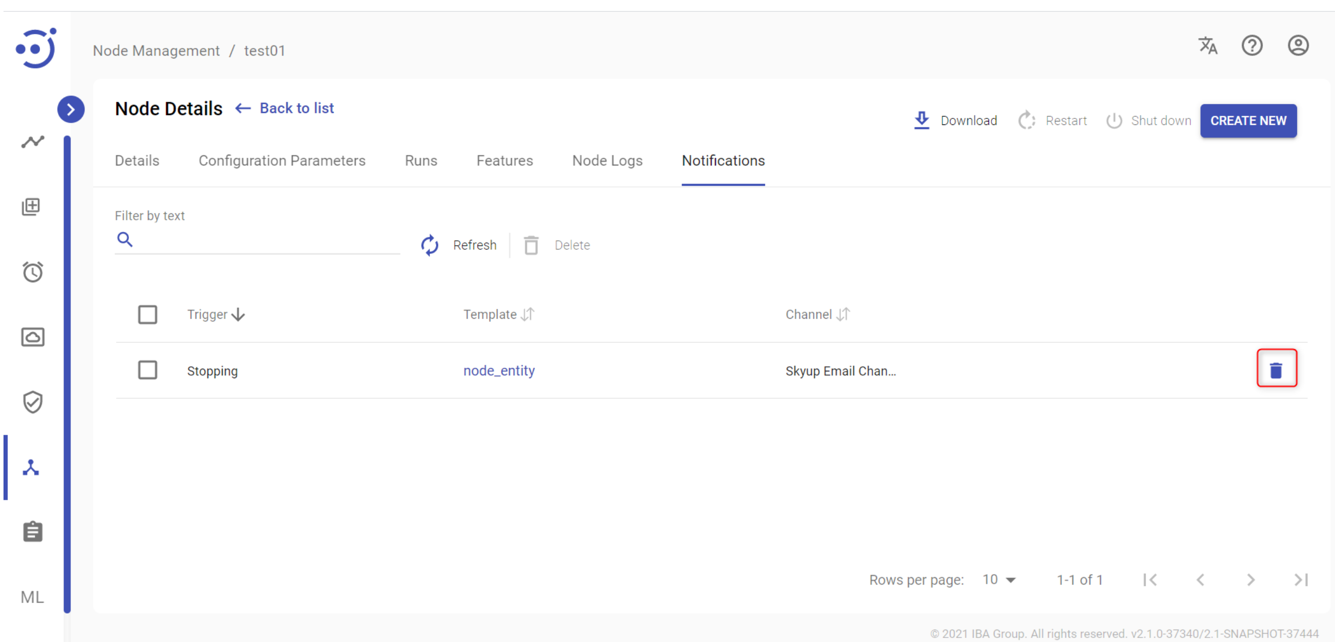
- Click **Update**.

To update the Automation Process Notifications, you need to be granted Node-UPDATE permission. See (v. 2.2) Role Permissions.

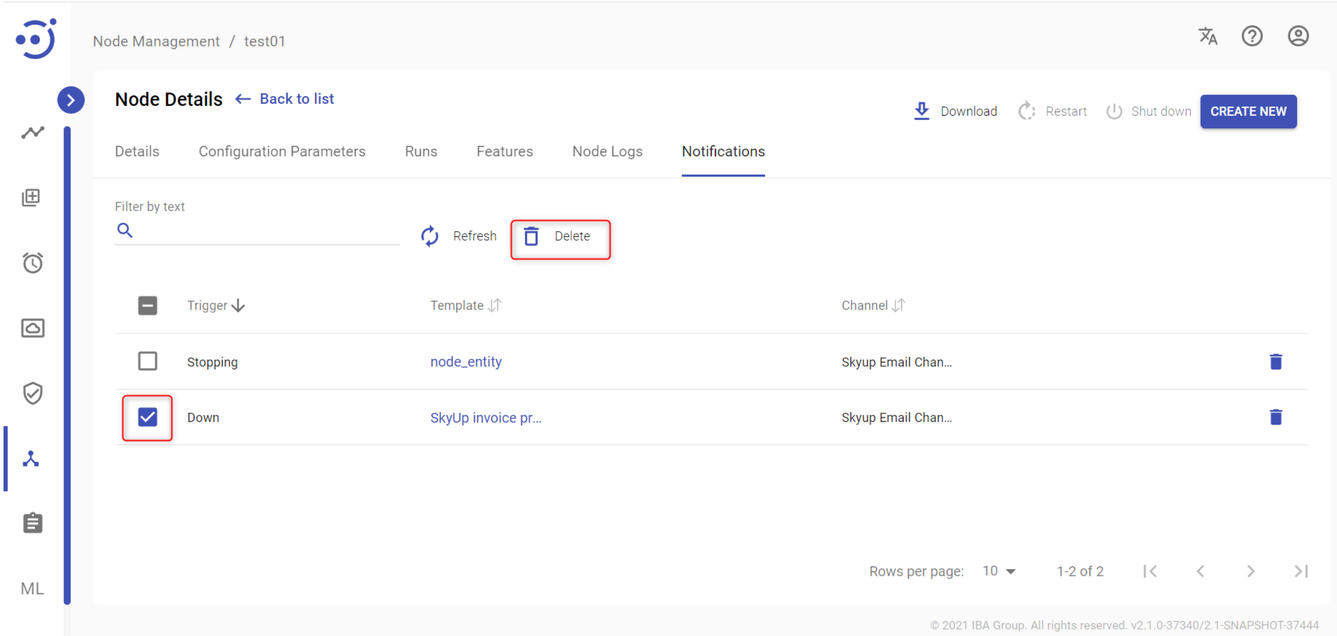
Delete Notifications

There 2 ways to **Delete** Notifications:

- **Press** control icon **Delete.**



- Choose the particular (or all) Notification and press icon **Delete.**



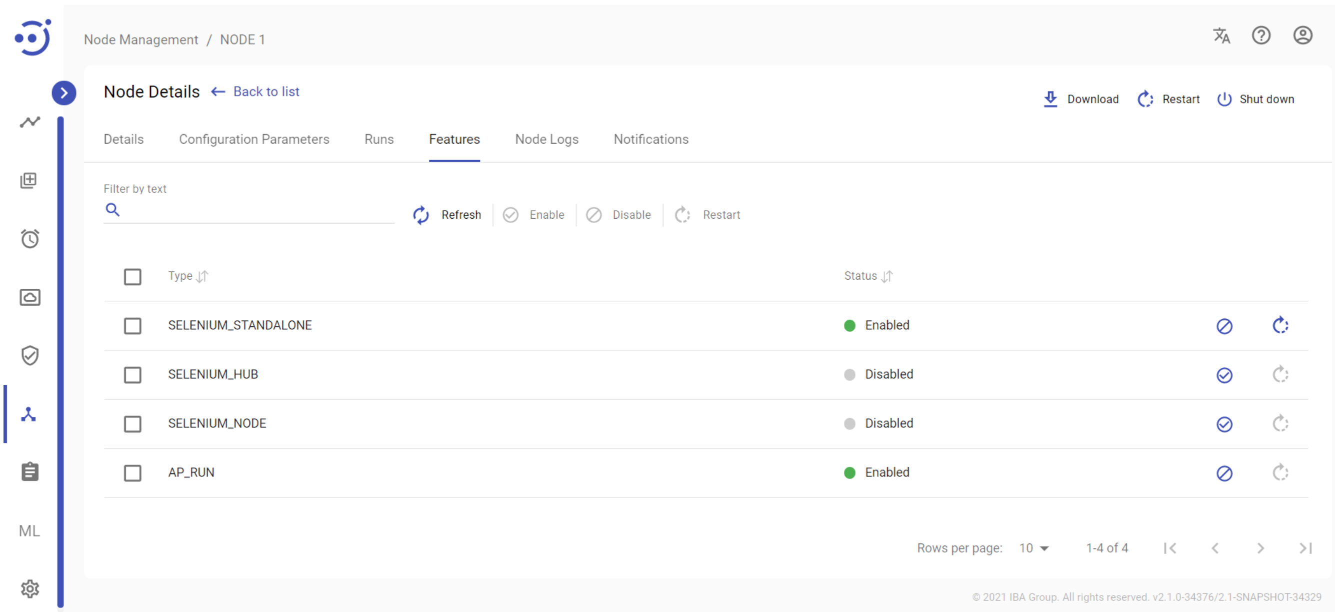
You need to be granted Node-UPDATE permission. See (v. 2.2) Role Permissions.

(v. 2.2) Node Features

- Automation Process Run Feature
- Selenium Configuration
    - General Selenium Feature Configuration
    - Selenium Hub Feature
    - Selenium Node Feature
    - Selenium Standalone Feature
    - Driver Storage
- Feature Logs

The Node Features tab displays the list of system capabilities available for the specific node.

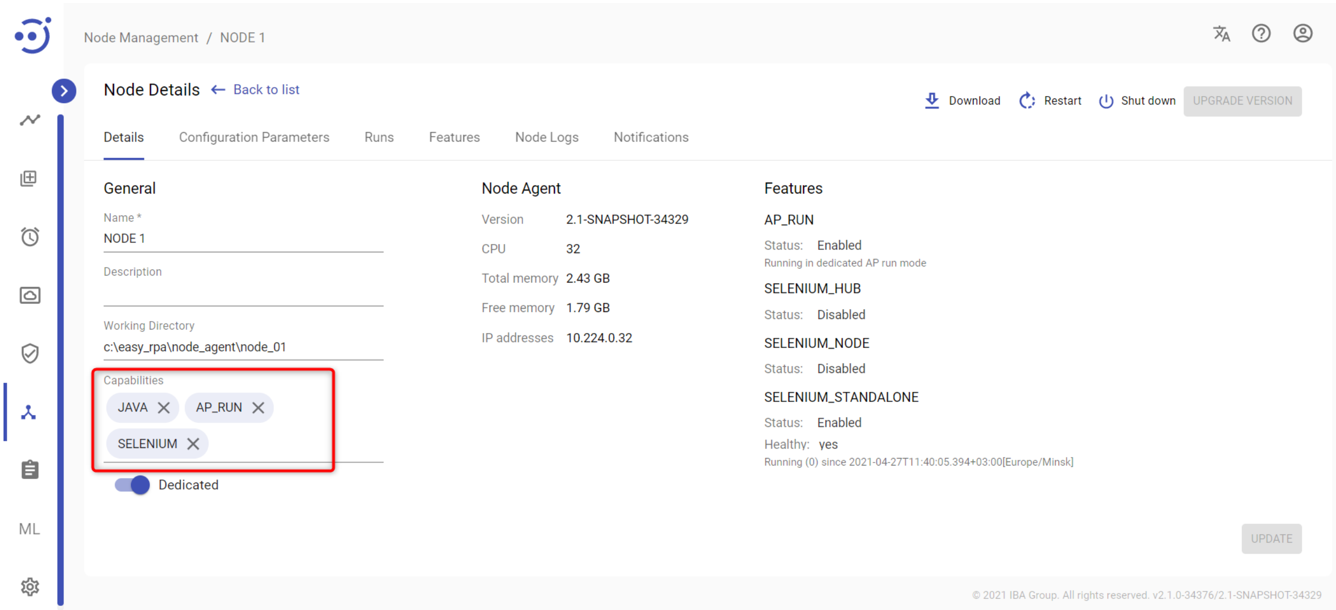
You can configure node features by clicking **Node Management Node Details Features**. Required Permissions: Node-READ (to view a node feature configuration), Node-UPDATE (to change a node feature configuration). See (v. 2.2) Role Permissions.



Each node has the following list of default features:

- AP_RUN
- SELENIUM_HUB
- SELENIUM_NODE
- SELENIUM_STANDALONE

The node features can receive two statuses: **Disabled**/**Enabled**. Those features that are enabled appear as tags at the Capabilities field at **Node Management Node Details Details**.



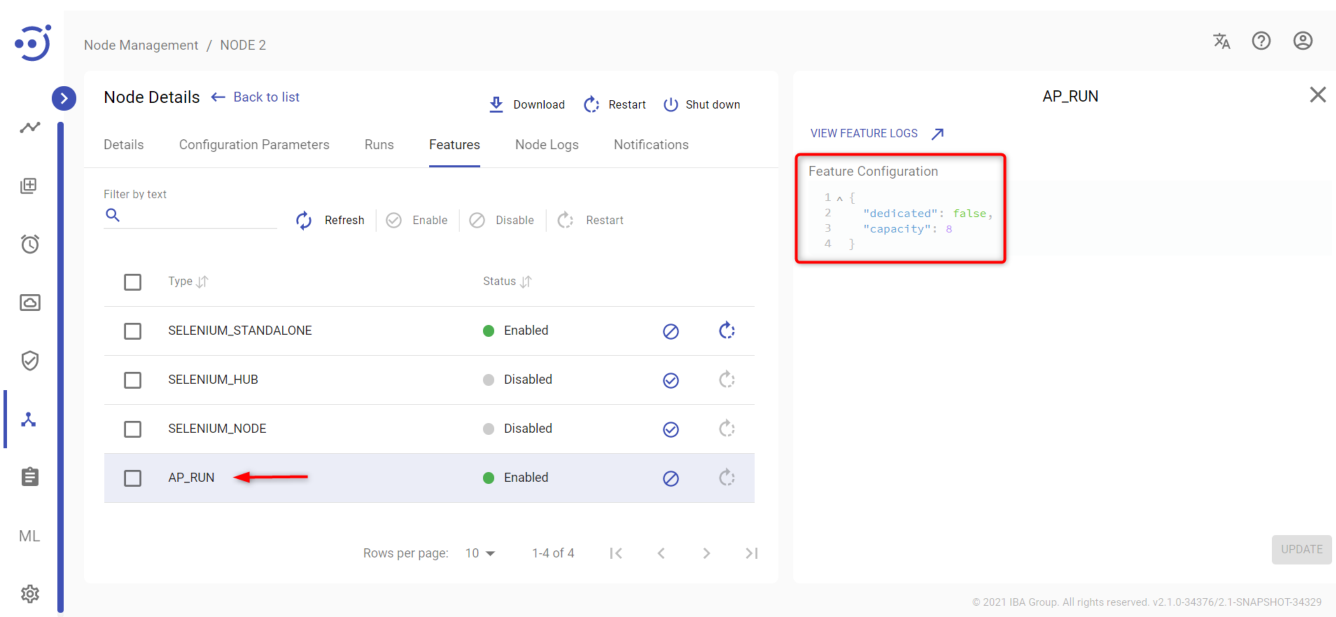
You can also observe the following information about the node features at the Details tab:

- Status
- Healthy
- Timestamp of run

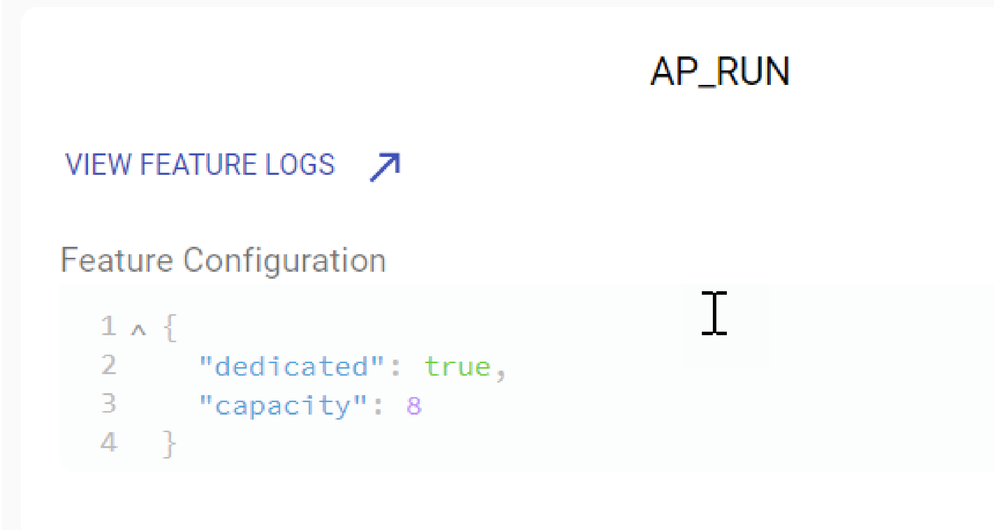
Automation Process Run Feature

The AP_RUN feature is capable to run automation processes and is enabled by default.

It can be configured to run dedicated or non-dedicated automation processes. The configuration for **non-dedicated** automation processes:



The configuration for **dedicated** automation processes: "dedicated": true.



The capacity setting allows you to set up the quantity of different automation process tasks that can be run on the node at the same time.

⚠️ If the AP_RUN feature is disabled, the node cannot run automation processes.

Selenium Configuration

Selenium Hub, Selenium node and Selenium standalone features make use of Selenium infrastructure and hence have many common settings.

You can manage configuration parameters for each feature in JSON format at the pop-up panel at the right by clicking on the corresponding row with the feature. The overview of the parameters see below

General Selenium Feature Configuration

The general configuration parameters for all features includes the following fields:

- `restartTimeout`: time in milliseconds to wait for the process to finish or restart
- `url`: the container that describes how the node fetches the file
  - `type`: the storage provider, possible values are `S3`, `URL`, `NEXUS`
  - `location`: the path to selenium server executable jar - relative if the type is `S3` or `NEXUS`, absolute if `URL`
- `file`: the name of selenium server jar file stored on node agent
- `port`: the port number on which selenium will be started

Selenium Hub Feature

The SELENIUM_HUB feature is capable to use the Selenium framework for automating web browser actions. The feature allows configuring a single machine (hub), that delegates requests to different machines (nodes).

SELENIUM_HUB

VIEW FEATURE LOGS

Feature Configuration

```
{
  "restartTimeout": 10000,
  "url": {
    "type": "S3",
    "location": "easyrpa/selenium/selenium-server-standalone-3.141.59.jar"
  },
  "file": "selenium-server-standalone-3.141.59.jar",
  "port": 4444
}
```

The description of each parameter is given in the General Selenium Feature Configuration title above.

⚠️ SELENIUM_HUB and SELENIUM_NODE features work in conjunction and both must be Enabled for setting up the Selenium grid.

Selenium Node Feature

The SELENIUM_NODE feature is capable to use the Selenium framework for automating web browser actions. SELENIUM_NODE feature works in conjunction with SELENIUM_HUB.

The feature allows configuring web drivers that are supported for automation processes execution.

SELENIUM_NODE

VIEW FEATURE LOGS

Feature Configuration


```
{
  "restartTimeout": 10000,
  "url": {
    "type": "S3",
    "location": "easyrpa/selenium/selenium-server-standalone-3.141.59.jar"
  },
  "file": "selenium-server-standalone-3.141.59.jar",
  "drivers": [
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/chromedriver.exe"
      },
      "file": "chromedriver.exe",
      "seleniumCapabilities": {
        "browserName": "chrome",
        "maxInstances": "3"
      },
      "driverName": "chrome"
    },
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/geckodriver.exe"
      },
      "file": "geckodriver.exe",
      "seleniumCapabilities": {
        "browserName": "firefox",
        "maxInstances": "3"
      },
      "driverName": "gecko"
    },
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/msedgedriver.exe"
      },
      "file": "msedgedriver.exe",
      "seleniumCapabilities": {
        "browserName": "MicrosoftEdge",
        "maxInstances": "3"
      },
      "driverName": "edge"
    },
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/IEDriverServer.exe"
      },
      "file": "IEDriverServer.exe",
      "seleniumCapabilities": {
        "browserName": "internet explorer",
        "maxInstances": "3",
        "version": "11"
      },
      "driverName": "ie"
    },
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/operadriver.exe"
      },
      "file": "operadriver.exe",
      "seleniumCapabilities": {
        "browserName": "operablink",
        "maxInstances": "3"
      },
      "driverName": "opera"
    }
  ],
  "port": 4401,
  "hub": "http://localhost:4444/grid/register"
```

```
}
```

UPDATE

The description of some parameters is given in the General Selenium Feature Configuration title above. Along with the selenium capabilities here are the parameters of the web drivers:

Root section

- drivers: the list of web drivers supported by this node
- hub: the URL at which the selenium hub registers the nodes, for example http://localhost:4444/grid/register

List of drivers:

- file: the name of web driver file as it will be stored on node agent
- driverName: the name of system property corresponding to this web driver, passed as -Dwebdriver.<driverName>.driver=...
- seleniumCapabilities: the list of key-value pairs corresponding to selenium capabilities, passed as -browser "key1=value1, key2=value2..."

Selenium Capabilities section:

- browserName: supported values are chrome, firefox, MicrosoftEdge, internet explorer, operablink
- maxInstances: the maximum number of browser instances to run at the same time
- version: the browser version, or the empty string if unknown
- platform: the platform that the browser should run on, currently support is only guaranteed for WINDOWS

Selenium Standalone Feature

The SELENIUM_STANDALONE feature is capable to use the Selenium framework for automating web browser actions. The feature works independently of the SELENIUM_HUB and represents the hub + the only node on which automation processes can be executed.

⚠️ It is advised to use the SELENIUM_STANDALONE feature for automation processes that imply a low load with a limited number of sessions.

SELENIUM_STANDALONE

VIEW FEATURE LOGS ↗

Feature Configuration


```json
{
  "restartTimeout": 10000,
  "url": {
    "type": "S3",
    "location": "easyrpa/selenium/selenium-server-standalone-3.141.59.jar"
  },
  "file": "selenium-server-standalone-3.141.59.jar",
  "drivers": [
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/chromedriver.exe"
      },
      "file": "chromedriver.exe",
      "seleniumCapabilities": {
        "browserName": "chrome",
        "maxInstances": "3"
      },
      "driverName": "chrome"
    },
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/geckodriver.exe"
      },
      "file": "geckodriver.exe",
      "seleniumCapabilities": {
        "browserName": "firefox",
        "maxInstances": "3"
      },
      "driverName": "gecko"
    },
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/msedgedriver.exe"
      },
      "file": "msedgedriver.exe",
      "seleniumCapabilities": {
        "browserName": "MicrosoftEdge",
        "maxInstances": "3"
      },
      "driverName": "edge"
    },
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/IEDriverServer.exe"
      },
      "file": "IEDriverServer.exe",
      "seleniumCapabilities": {
        "browserName": "internet explorer",
        "maxInstances": "3",
        "version": "11"
      },
      "driverName": "ie"
    },
    {
      "url": {
        "type": "S3",
        "location": "easyrpa/selenium/drivers/operadriver.exe"
      },
      "file": "operadriver.exe",
      "seleniumCapabilities": {
        "browserName": "operablink",
        "maxInstances": "3"
      },
      "driverName": "opera"
    }
  ],
  "port": 4404
}
```

The description of some parameters is given in the General Selenium Feature Configuration title above. Along with the selenium capabilities here are the parameters of the web drivers:

Root section

- `drivers`: the list of web drivers supported by this node

List of drivers:

- `file`: the name of web driver file as it will be stored on node agent
- `driverName`: the name of system property corresponding to this web driver, passed as `-Dwebdriver.<driverName>.driver=...`
- `seleniumCapabilities`: the list of key-value pairs corresponding to selenium capabilities, passed as `-browser "key1=value1, key2=value2..."`

Selenium Capabilities section:

- `browserName`: supported values are `chrome`, `firefox`, `MicrosoftEdge`, `internet explorer`, `operablink`
- `maxInstances`: the maximum number of browser instances to run at the same time
- `version`: the browser version, or the empty string if unknown
- `platform`: the platform that the browser should run on, currently support is only guaranteed for `WINDOWS`

Driver Storage

When the selenium node feature is being enabled, the node agent retrieves the web drivers in the following steps:

1. analyzing driver list from selenium feature configuration
2. downloading each driver from `url` section
3. saving downloaded drivers with the name taken from `file` field to node working directory. It can be the default folder like `%Temp%\NODE NAME\` or custom folder that you specified on the Node Details tab.

Typical Node cache content:

```
29.12.2020  13:55    <DIR>          .
29.12.2020  13:55    <DIR>          ..
27.12.2020  15:54    <DIR>          ap-run
24.12.2020  13:57         9 721 344 chromedriver.exe
24.12.2020  13:57         2 980 048 geckodriver.exe
27.12.2020  18:03         3 420 672 IEDriverServer.exe
24.12.2020  13:57         9 292 184 msedgedriver.exe
24.12.2020  18:18    <DIR>          nexus-repo
29.12.2020  13:55                 0 node.lock
27.12.2020  17:54        10 936 344 operadriver.exe
24.12.2020  13:57        10 649 948 selenium-server-standalone-3.141.59.jar
```

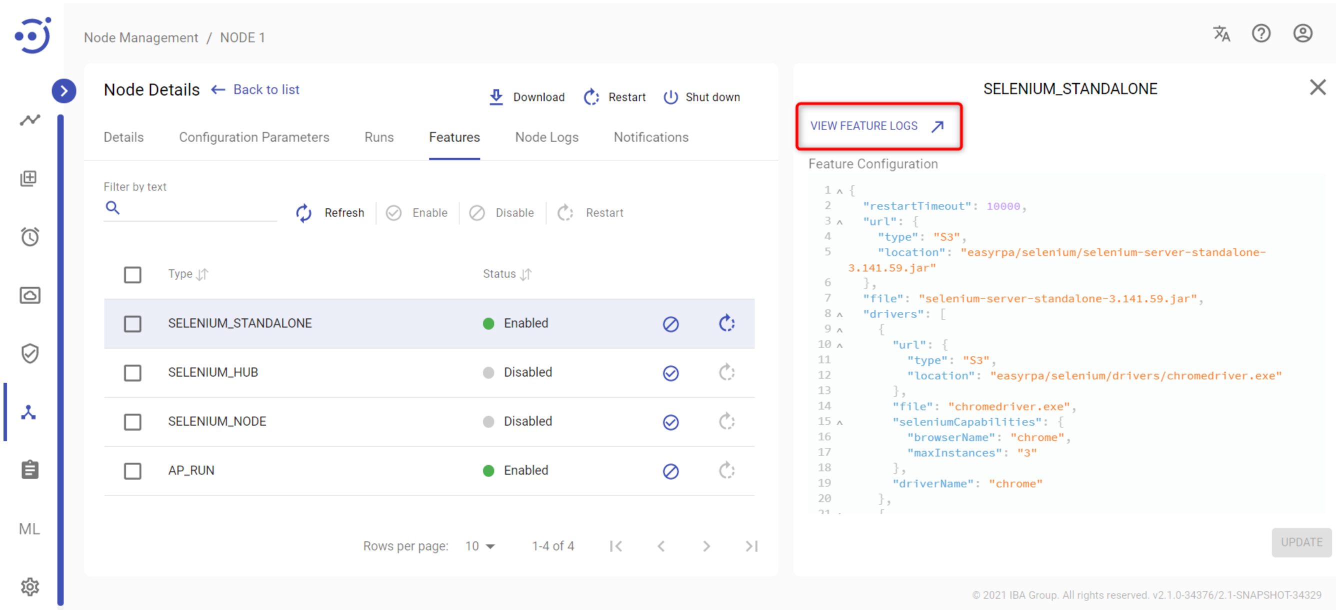
Driver version can be checked by running `--version` command from the node working directory.

```
>chromedriver.exe --version
ChromeDriver 84.0.4147.30 (48b3e868b4cc0aa7e8149519690b6f6949e110a8-refs/branch-heads/4147@{#310})
```

Feature Logs

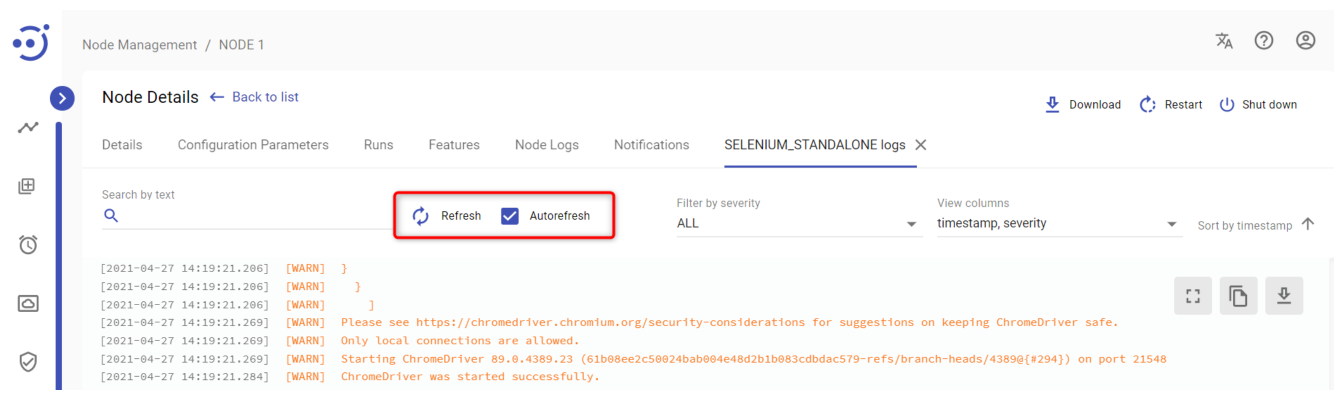
Each node feature has logs that show how the feature is used.

You can access feature logs by clicking **View Feature Logs** at the corresponding node feature. To access the Node feature logs, you need to be granted Node-READ permission. See Role Permissions .



Control icons

- Refresh - to pull the latest logs from the server.
- Autorefresh checkbox - to turn on/off an automatic refresh of logs.

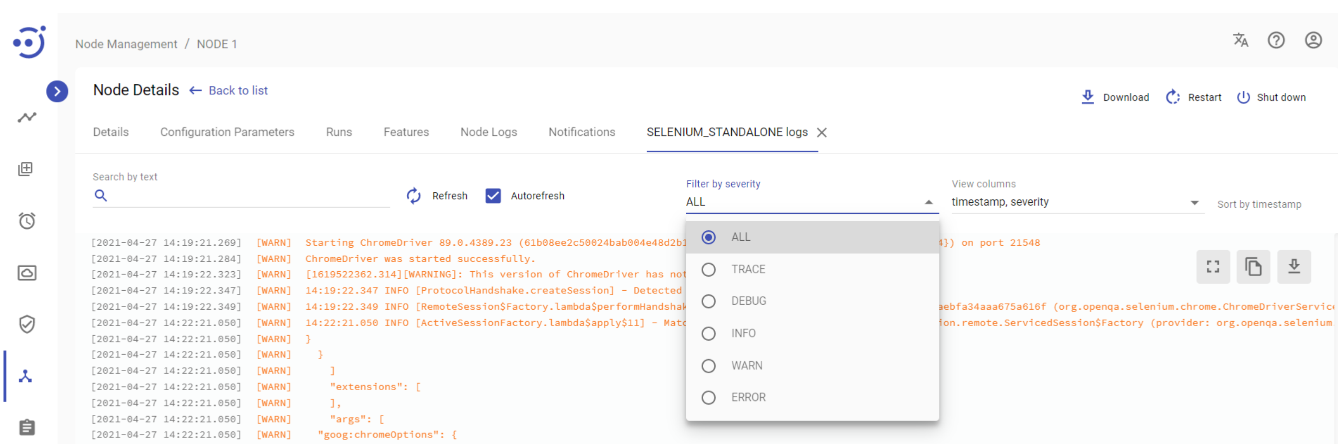


Search by text

You can search for a particular log by its text. The logs found are highlighted in yellow.

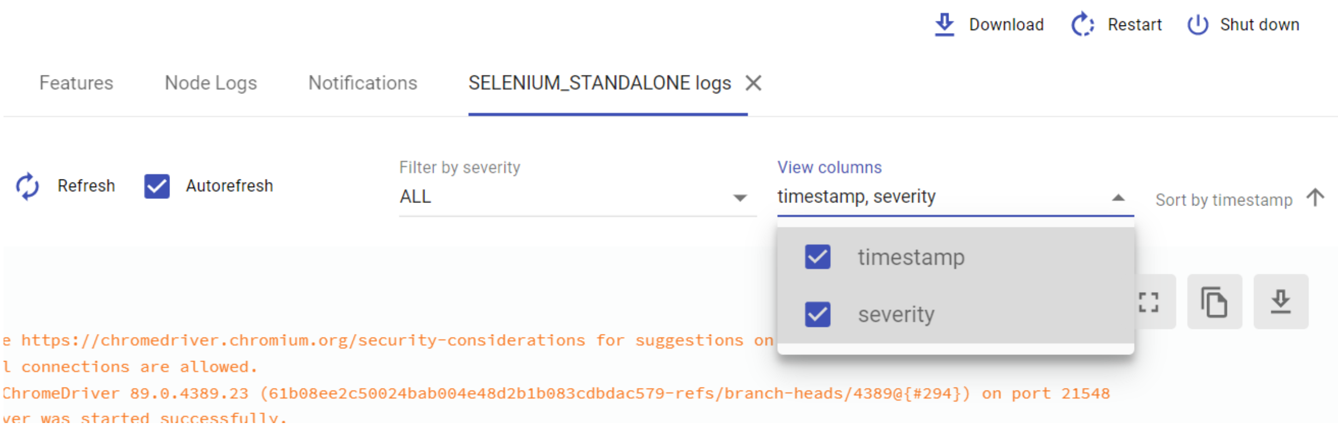
Filter by severity

Filtering allows you to choose the level of severity of the displayed logs from the dropdown menu. The available options are as follows:



View columns

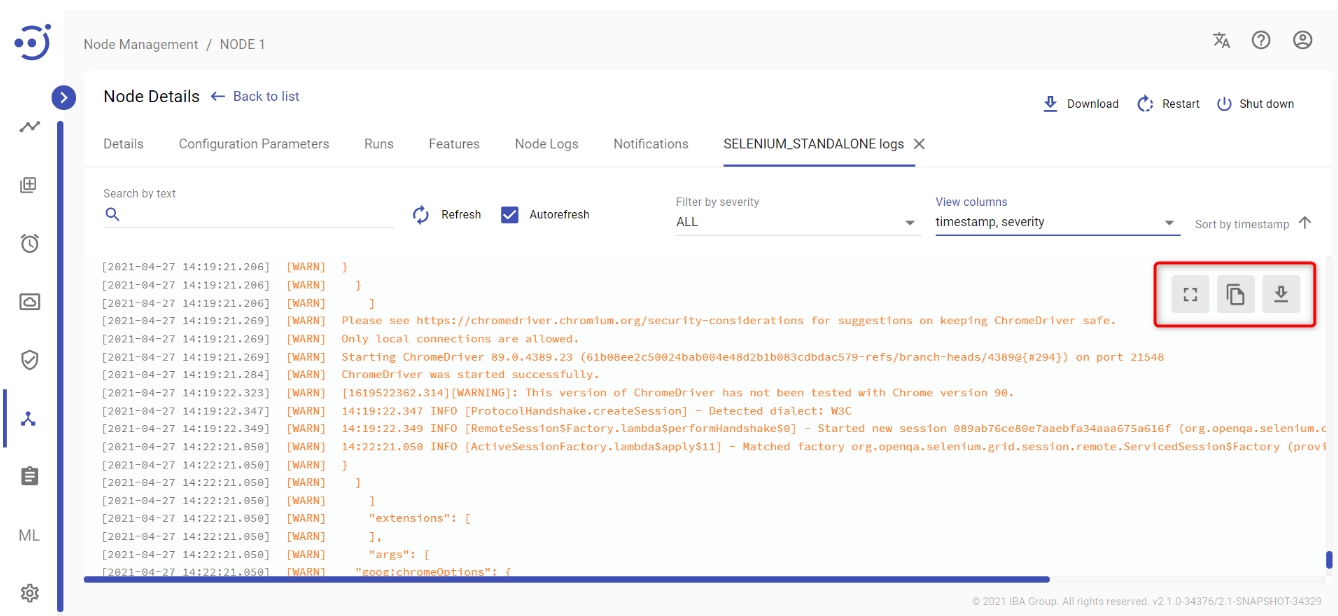
You can add or remove the columns timestamp/severity from the event log view.



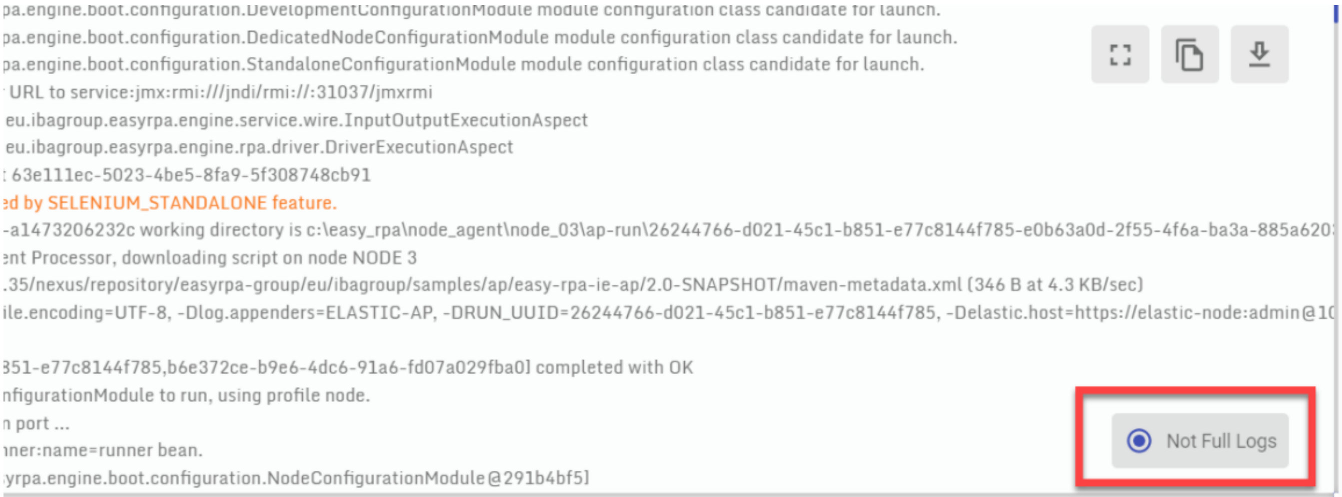
Sort by timestamp

Ascending/descending logs sorting by the timestamp is allowed.

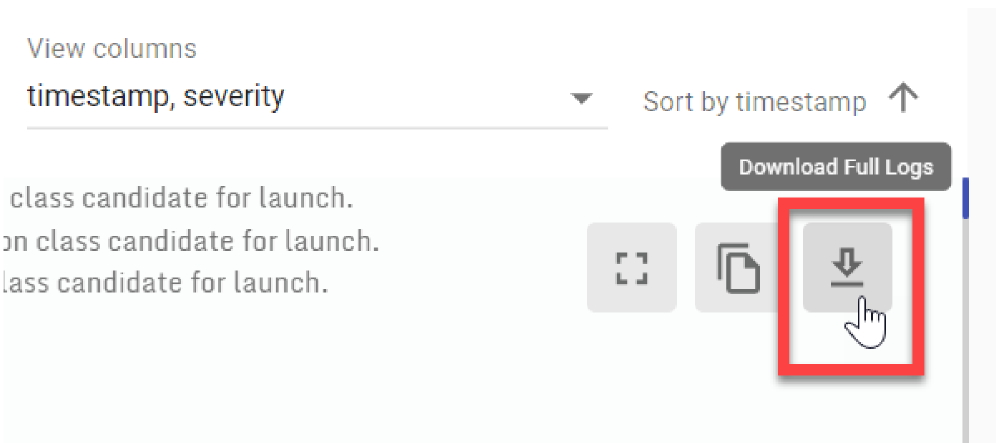
In the upper-right corner of the logs window there are buttons for opening logs in the full browser window, copy logs to the clipboard and download a .txt file with logs:



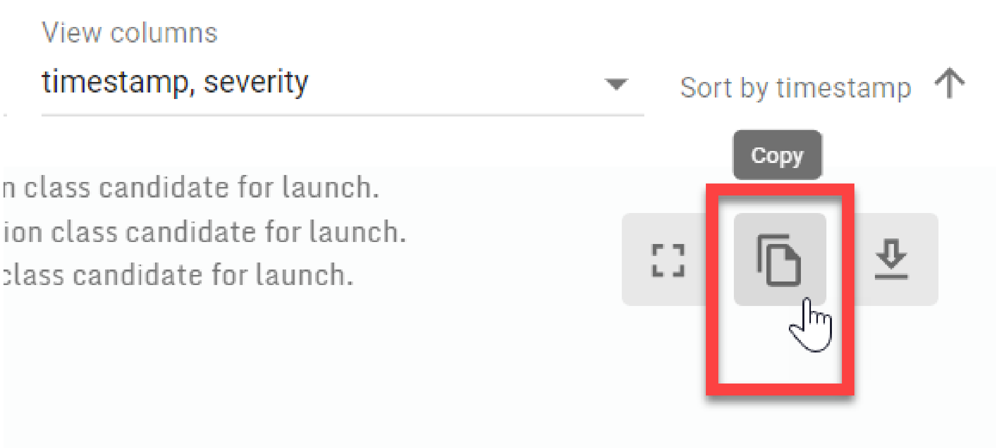
"Not Full Logs" indicator appears at the bottom right corner when the log becomes too long for one page:



To download full logs use the Download button:



To copy the displayed logs only use the Copy button:



(v. 2.2) WebDriver Version Update

This section provides information about the best practices for updating the web driver.

- Semi-automatic driver update method
- Manual driver update method
- Obtaining right web driver version
- Common issues and solutions

Each web driver has a version corresponding to a particular browser version. Therefore, if the browser receives the update automatically (and the web driver - does not), a version mismatch exception may occur.

For example, automation processes using the Chrome browser may encounter the following exception:

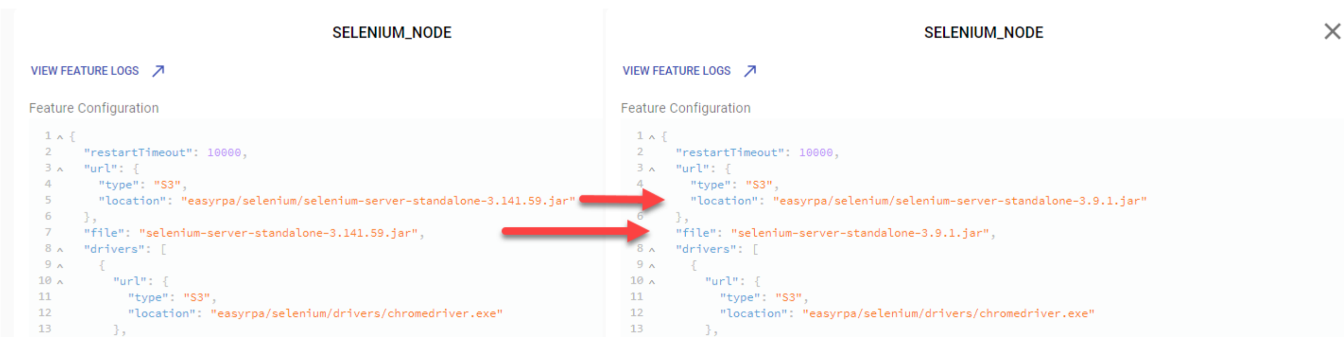
```
SessionNotCreatedException: session not created: This version of ChromeDriver only supports Chrome version 84
```

Since the web driver is tied to the node environment, you need to identify the node on which the automation process was running to fix the exception.

Semi-automatic driver update method

The easiest way to update the web-drivers is to put a new driver's version in the data storage (see the `url` section in the Node Details Features selenium feature parameters at the right pop-up panel). New drivers will be automatically updated on the node after the feature or the node is restarted.

If the driver contains a version in its name, you also need to specify the `file` field.



Manual driver update method

To update drivers manually, you need to download the appropriate driver version and replace it in the node's working directory. However, if there is a recently added file in the data storage, the driver will be updated when the feature or node is restarted.

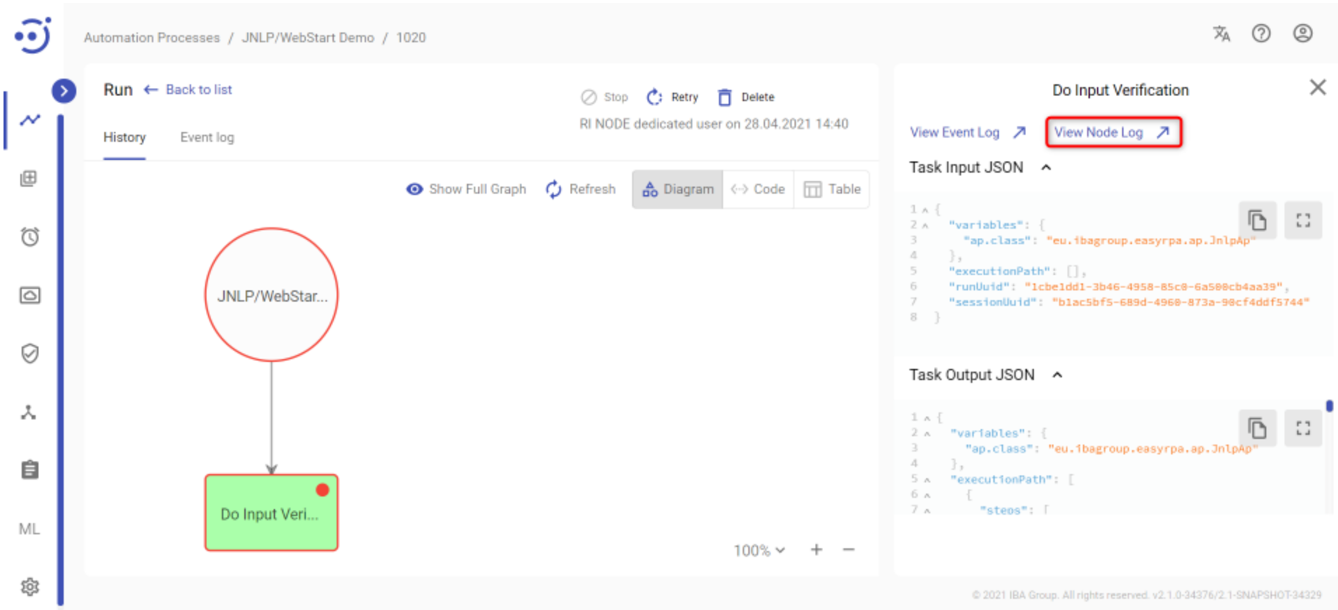
How to Update the Driver Version

There are two possible ways to identify the node on which the automation process is running for the purpose :

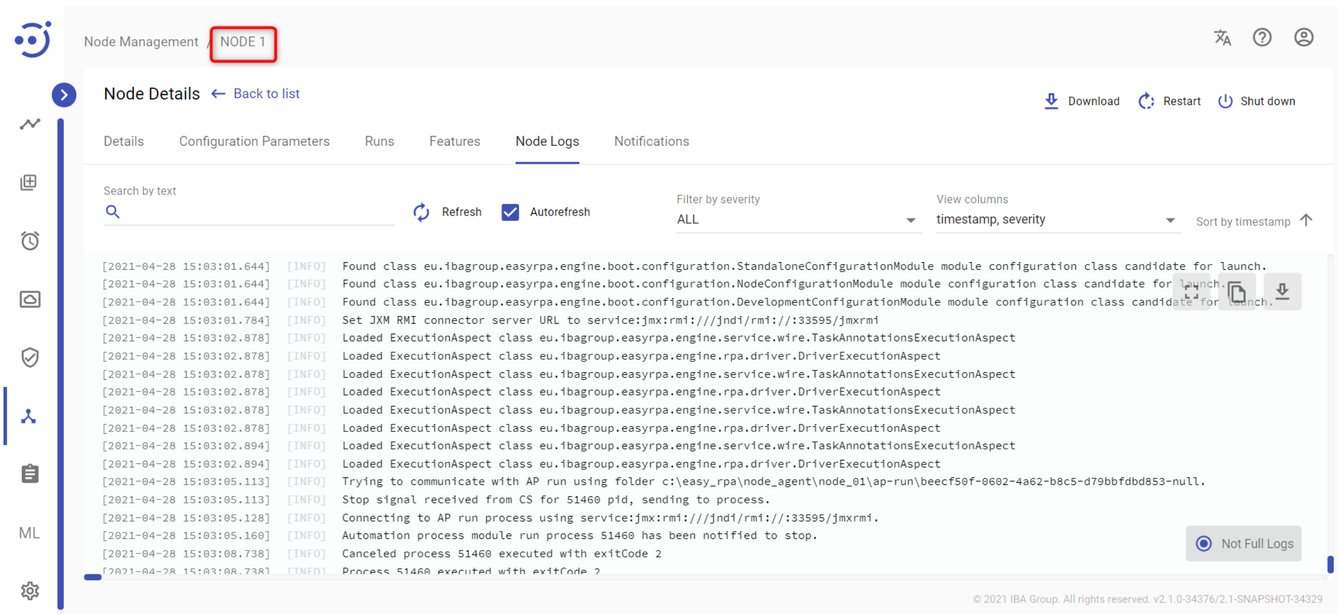
1. Check the **automation process Event Log**.
2. Check the **Node Logs**.

How to check the Node Logs

- Open the automation process run history.
- Select the failed task.
- Click the **View Node Log**.

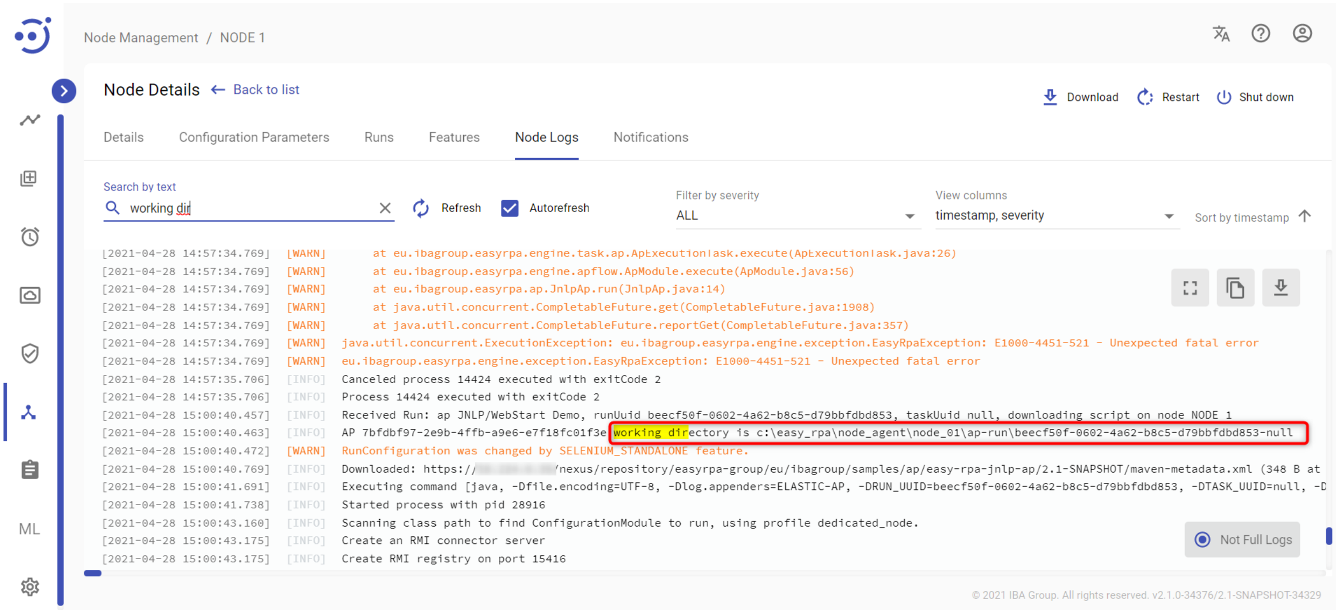


- The corresponding Node Logs are opened.

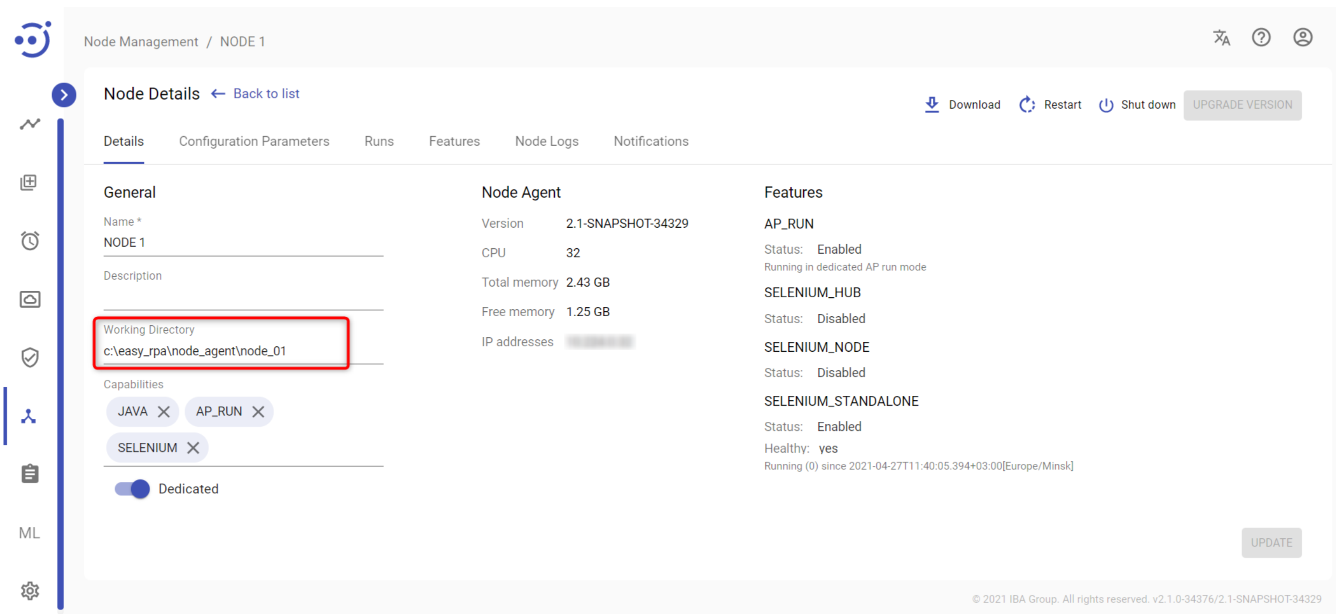


- Search for the working directory by the node name. All drivers, as well as automation process dependencies, are stored in the working directory.

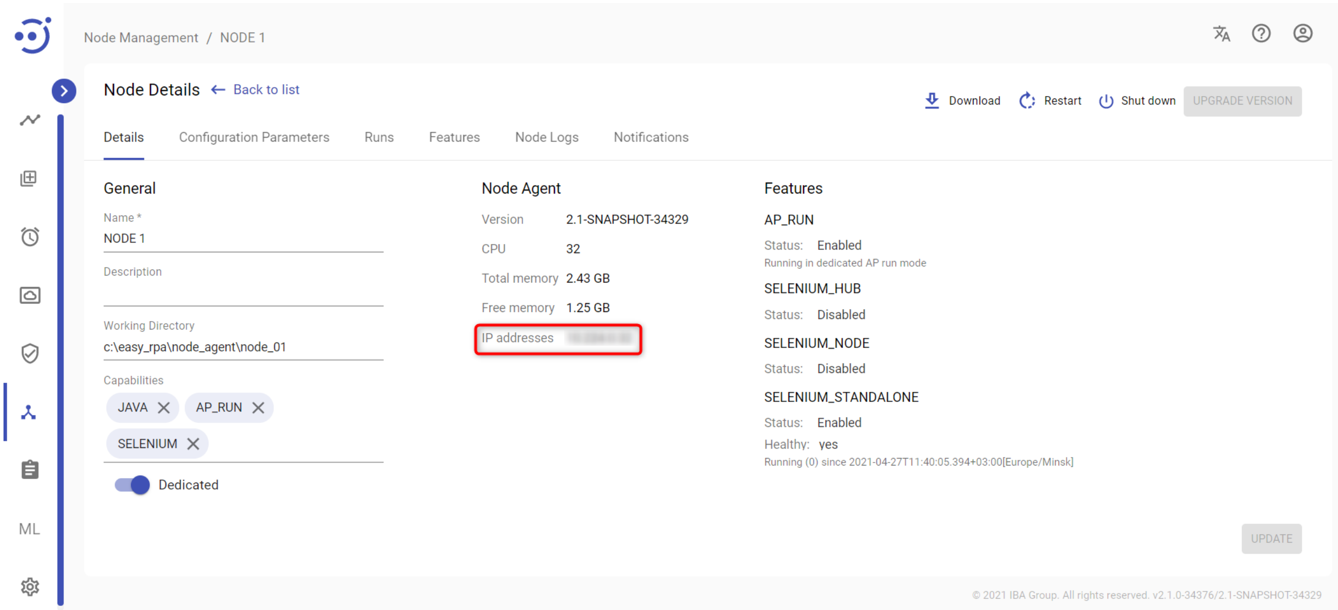
⚠️ This can be the default folder, such as `%Temp%\NODE NAME\`or a custom folder specified on the Node Details tab.



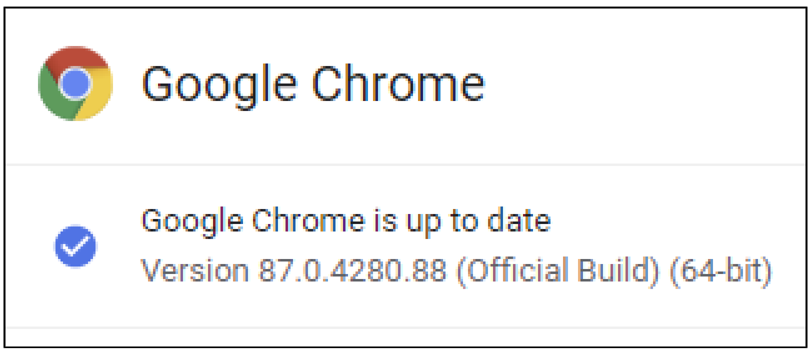
Working directory path can also be found at the **Node Details** tab:



- To identify the Node host, go to the **Node Details** tab and check its IP address.



- Connect to the desired machine, open the Chrome browser and check the version through the *Help About* menu.



- To fix the exception, you should replace the corresponding web driver file stored on the node with the required version.

⚠️ You can check the driver version by running the `--version` command from the node's working directory.

```
>chromedriver.exe --version
ChromeDriver 84.0.4147.30 (48b3e868b4cc0aa7e8149519690b6f6949e110a8-refs/branch-heads/4147@{#310})
```

Obtaining right web driver version

For the web-driver to run smoothly, the following conditions must be met:

- The major driver version must be equal to the major browser version. For example, the Chrome web-driver v. **87**.0.4280.88 is suitable for the Chrome browser v. **87**.0.4280.88.
- The platform architecture must match: you cannot run Linux driver on Windows.

The latest drivers for each browser can be found on the respective pages.

- Chrome: https://sites.google.com/a/chromium.org/chromedriver/downloads.
- Firefox: https://github.com/mozilla/geckodriver/releases.
- Edge: https://developer.microsoft.com/en-us/microsoft-edge/tools/webdriver/#downloads.
- Internet Explorer 11: https://selenium-release.storage.googleapis.com/index.html.
- Opera: https://github.com/operasoftware/operachromiumdriver/releases.

Links are relevant at the time of writing (March 2021).

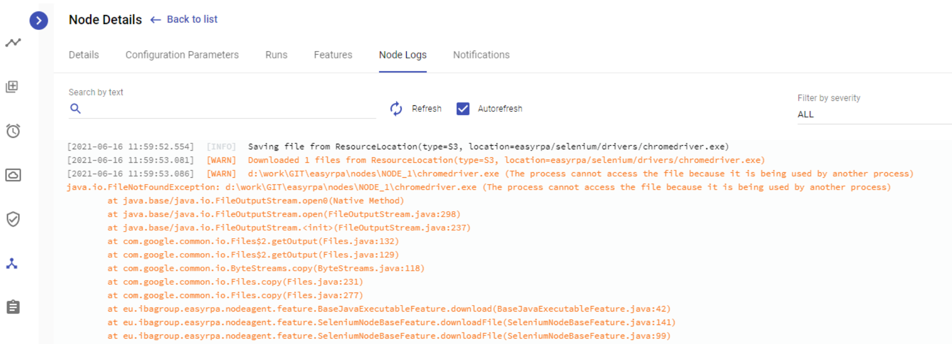
Common issues and solutions

<table>
<tr><th>Issue</th><th>Solution</th></tr>
<tr><td>

"The action could not be completed because the folder or file is open in another program." when replacing a driver file.

"--no-sandbox"

parameter selenium server do not close child chromedriver.exe process.



</td><td>

The driver file can only be replaced if it is not currently being used. Check Windows Task Manager to find and stop running instances of the required web driver. You can also use the following command to kill all opened chromedriver.exe:

```
taskkill /im chromedriver.
exe /f
```

</td></tr>
<tr><td>"Cannot find firefox binary in PATH" when running the automation process in Firefox.</td><td>Firefox.exe must be placed in the PATH for geckodriver to work correctly.</td></tr>
</table>

(v. 2.2) Machine Learning

Machine Learning module is designed to enable user to perform a complete cycle of operations from document set collection, applying OCR conversion, tagging documents in Workspace, preparing training data sets to train machine learning models.

This section contains the following modules:

- (v. 2.2) Document Sets
  - (v. 2.2) Details
  - (v. 2.2) Documents
  - (v. 2.2) Runs
- (v. 2.2) Models

Document Sets module allows to create and view document sets used to train ML models along with their names, descriptions, creation /update time as well as data type and automation process used. Here users can edit document sets, populate them with necessary documents, assign correct labels and mark entities, prepare training data, and train models.

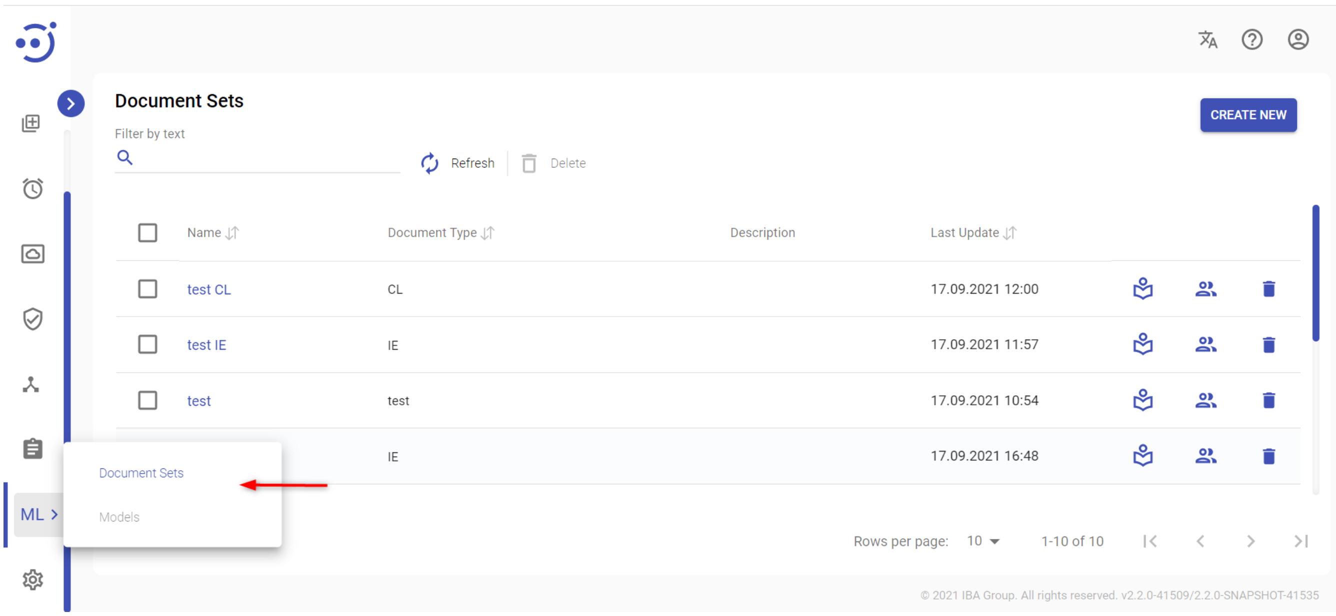
Models module provides users with a single point for ML models management: view all the models registered in the system, train new models and delete existing ones, export and import models.

(v. 2.2) Document Sets

Document Sets module allows to create and view document sets used to train ML models along with their names, descriptions, creation /update time as well as data type and automation process used. Here users can edit document sets, populate them with necessary documents, assign correct labels and mark entities, prepare training data, and train models.

The system also provides ability to import document sets as a single package with all the data, labels, and models included. Document Sets along with their content can also be deleted.

You can access the module by clicking **Machine Learning** **Document Sets**. Required Permission: DocumentSet-READ. See Role Permissions .



Document Sets Overview

Columns Description

- Name - the Document set name. By clicking on the document set name you can see the documents included into the document set.
- Document Type - the document type defines how the documents for Human Task are displayed for tagging, which output fields should be extracted during the tagging and Machine Learning training.
- Document Processor - the name of an automation process that controls life-cycle of a document set and includes preparation steps to display documents in the Human Task. By clicking on the Automation Process you can see the process runs.
- Description - a short description of the Document Set.
- Last Update - the last date and time when the documents were changed.

Control icons

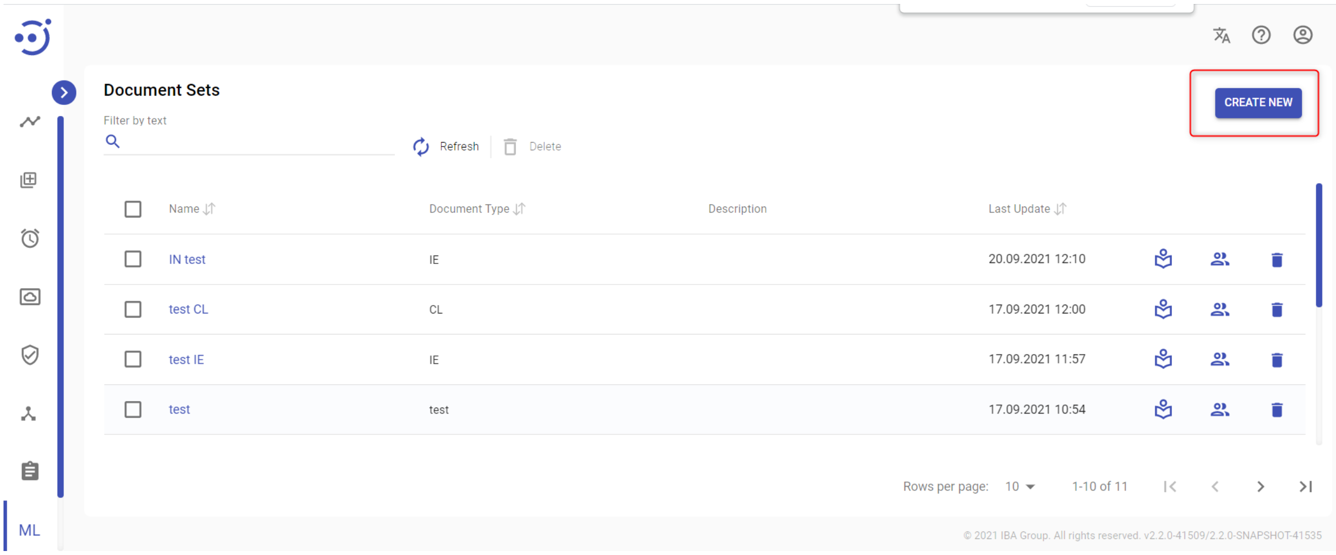
- **Refresh** - to pull the last updates from the server.
- **Train Model** - to train an ML model on documents contained in the Document Set. Please note, it's required to prepare a training set first. Required Permission: MlModel-CREATE.
- **Delete** - to delete the Document Set. Required Permission: DocumentSet-DELETE.

Filter by text

Filtering allows you to search the Document Sets by Name, Document Type, Document Processor, Description.

Sorting

Ascending/descending sorting is allowed for Name, Document Type, Document Processor, Last Update columns.

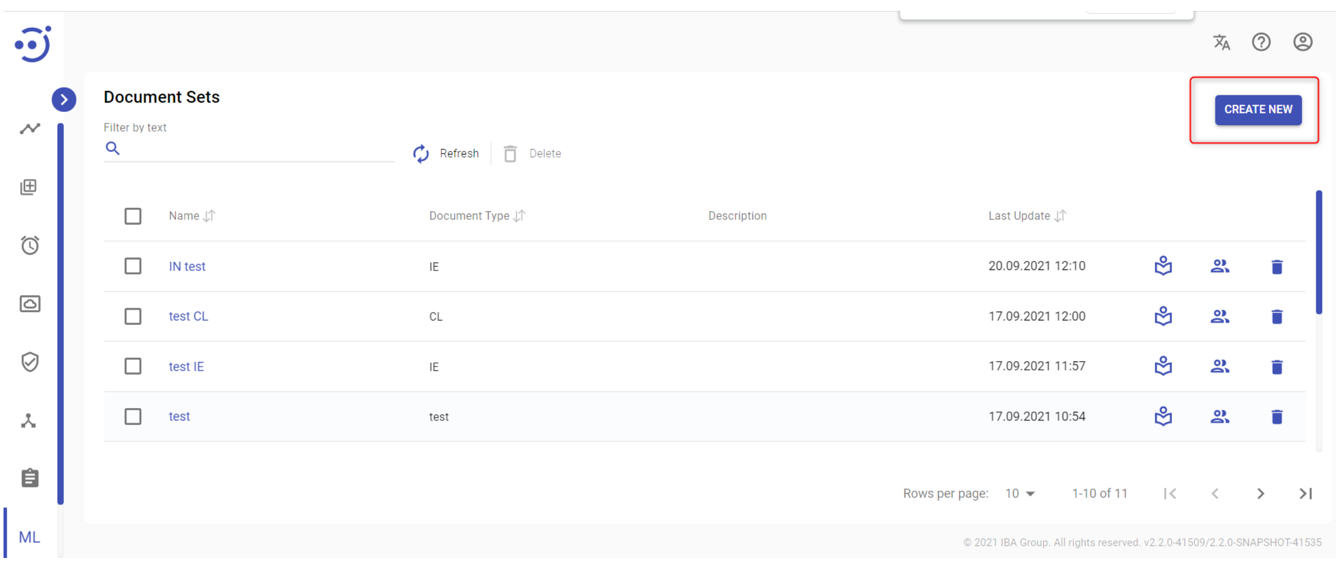


Manage Document Sets

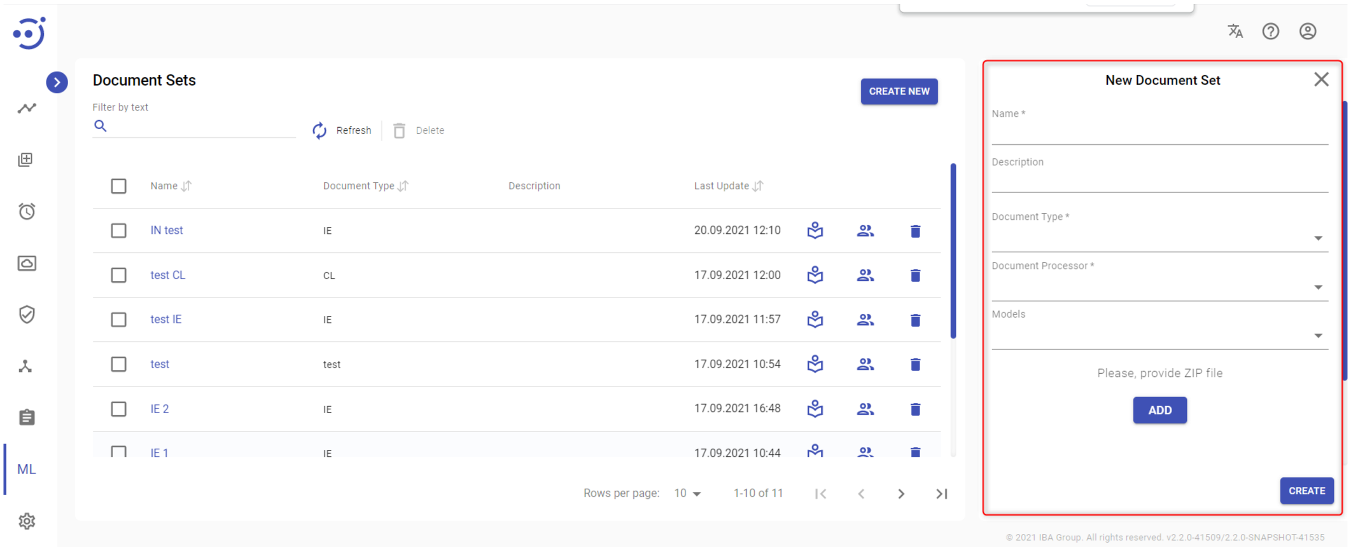
Create Document Sets

To create a new Document Set, you need to:

- Navigate to the **Document Sets**. Required Permissions to get there: AutomationProcess-READ and DocumentType-READ.
- Click **CREATE NEW** button. Required Permission: DocumentSet-CREATE. See (v. 2.2) Role Permissions.



- The **New Document Set** panel is displayed on the right.



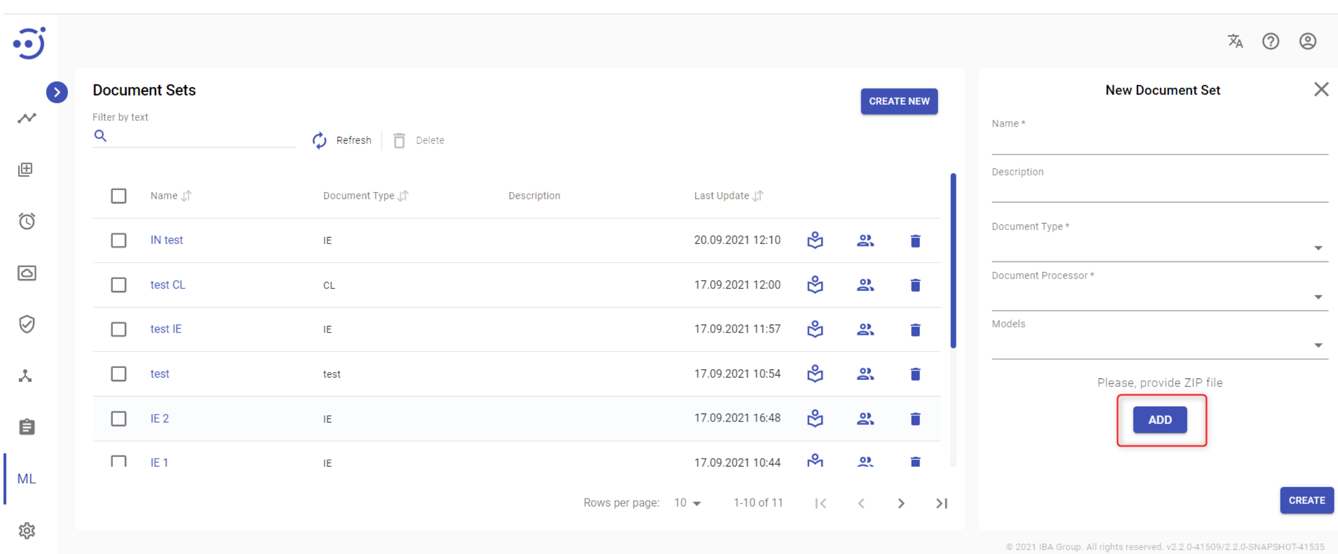
- Enter a document set **Name**.
- Optionally enter a short document set **Description**.
- Select a **Document Type** from the drop-down list.

The necessary document type should be created prior to creating a document set. A document type defines how the documents are displayed on Human Task for tagging, which output fields should be extracted during the tagging and Machine Learning training. If the required document type is missing from the drop-down list range navigate to **Administration Human Task Types Human Task Type Details Document Types** to create a new document type. For more details see Create a new Document Type.

- Select a **Document Processor** from the drop-down list.

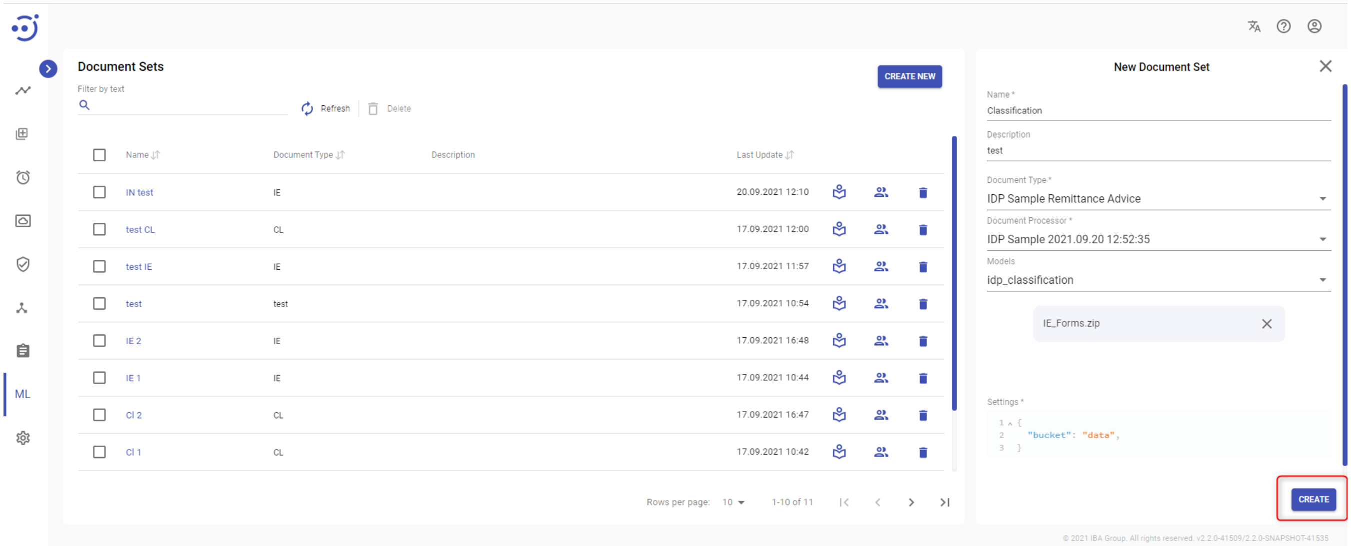
A document processor is an automation process that controls the document set workflow and includes preparation steps to display documents on the Human Task. The necessary document processor should be created prior to creating a document set. If the required document processor is missing from the drop-down list range navigate to **Automation Processes** to create a new document processor. For more details see Create a new Automation Process.

- Optionally select a ML **model** from the drop-down list to process the document set .
- Click **ADD** button to upload a .zip file with documents for a new document set. A file explorer window is displayed. Select a .zip file to be uploaded into the document set.



- Provide OCR configuration including Storage bucket name, Tesseract options, Image Magick and HocrFixWords options in the **Se ttings** field below Add button.
  - document_bucket – name of Storage bucket where OCR results will be saved;
  - tesseractOptions - Tesseract OCR command line options. Please see the external documentation Tesseract Command Line Usage.

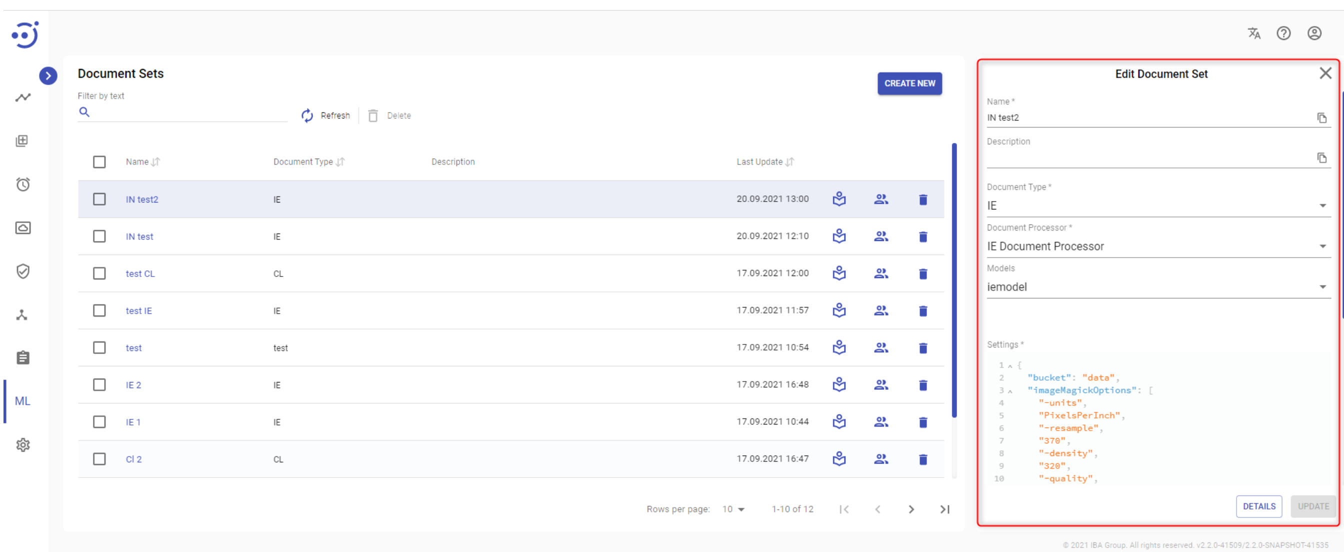
- imageMagickOptions - ImageMagick command line options. ImageMagick tool is used to split pdf by pages and print as images. Please follow Image Magick Command Line Documentation.
  - hocrFixWords - Map with string key-value pairs. Key is a regex and it is used to find mistakes in each word separately. All matches are replaced by value string.
- Click **CREATE** button the save the document set. A new document set is created.



To create a new document set, you need to be granted DocumentSet-CREATE permission (with AutomationProcess-READ and DocumentType-READ). See (v. 2.2) Role Permissions.

Edit Document Sets

To edit key information about an existing document set click on **the corresponding row** with the document set. **Edit Document Set** panel is displayed on the right. Required Permissions: DocumentSet-UPDATE (with AutomationProcess-READ and MlModel-READ). See (v. 2.2) Role Permissions.



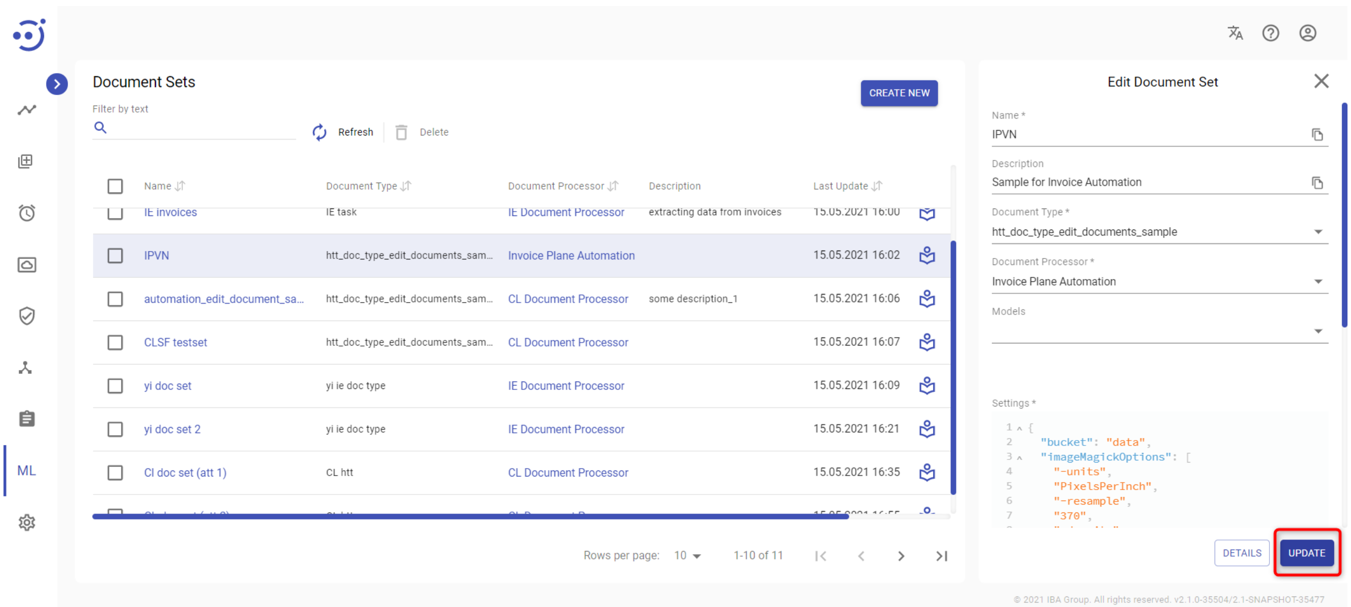
You can edit the following information about a document set on the displayed panel:

- Name – the document set name;
- Description – the document set short description;
- Document Type – a human task document type to be selected from the dropdown list, a document type defines how the documents are displayed on Human Task for tagging, which output fields should be extracted during the tagging and Machine Learning training;
- Document Processor – an automation process for the document set workflow, it includes preparation steps to display documents on the Human Task;
- Model – a ML model used to process the document set.

- Settings - OCR configuration including Storage bucket name, Tesseract options, Image Magick and HocrFixWords options:
  - document_bucket – name of Storage bucket where OCR results will be saved;
  - tesseractOptions - Tesseract OCR command line options. Please see the external documentation Tesseract Command Line Usage.
  - imageMagickOptions - ImageMagick command line options. ImageMagick tool is used to split pdf by pages and print as images. Please follow Image Magick Command Line Documentation.
  - hocrFixWords - Map with string key-value pairs. Key is a regex and it is used to find mistakes in each word separately. All matches are replaced by value string.

To manage documents within an existing document set click **Details** and proceed to **Documents** page.

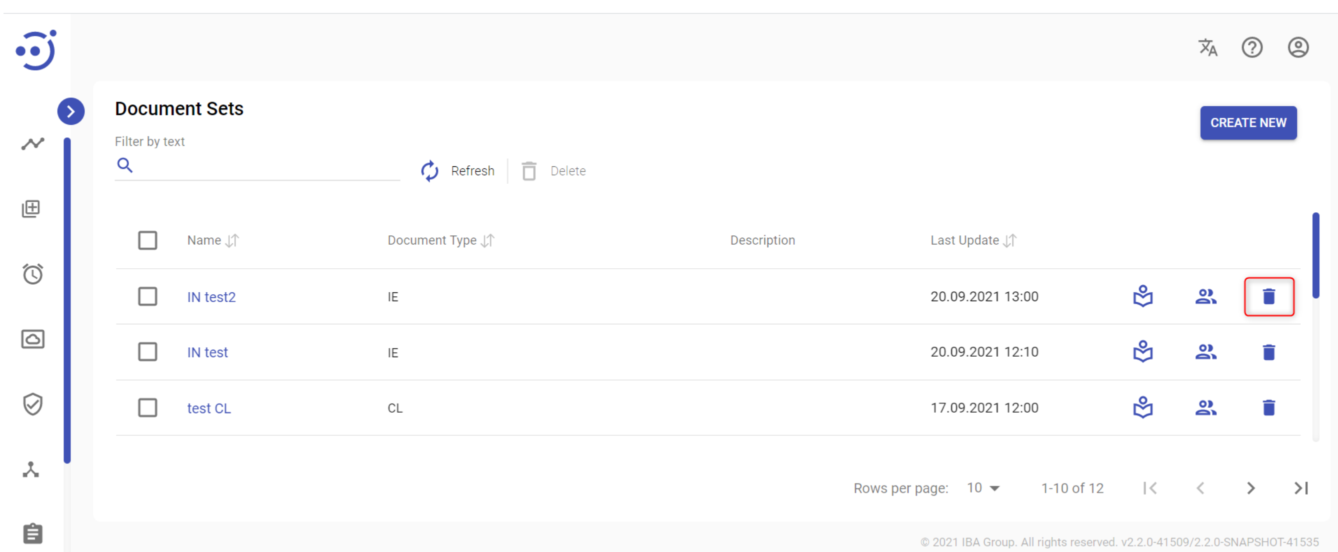
To save the result of editing click **UPDATE** button.



To edit a document set, you need to be granted DocumentSet-UPDATE permission. See (v. 2.2) Role Permissions.

Delete Document Sets

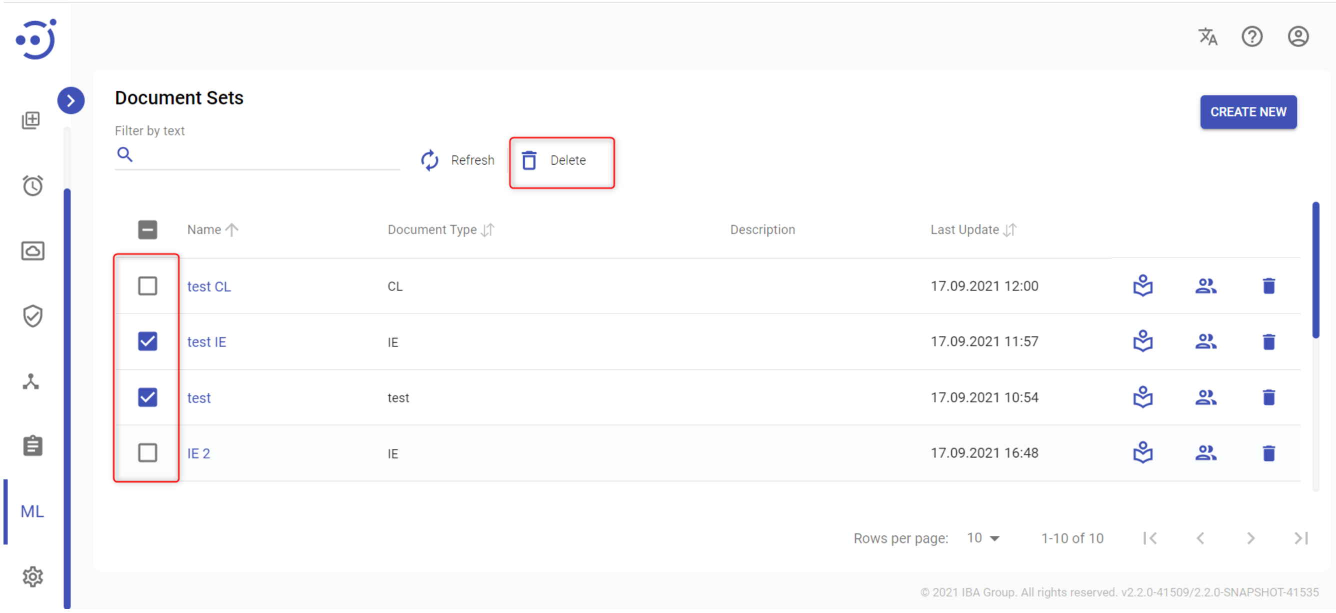
A single document set can be deleted by clicking **Delete** control icon in the corresponding document set row and confirming deletion.



To delete multiple document sets you need to:

- **Place checkmarks** next to desired document sets.
- Click **Delete** icon at the top of the page.

- Confirm deletion.

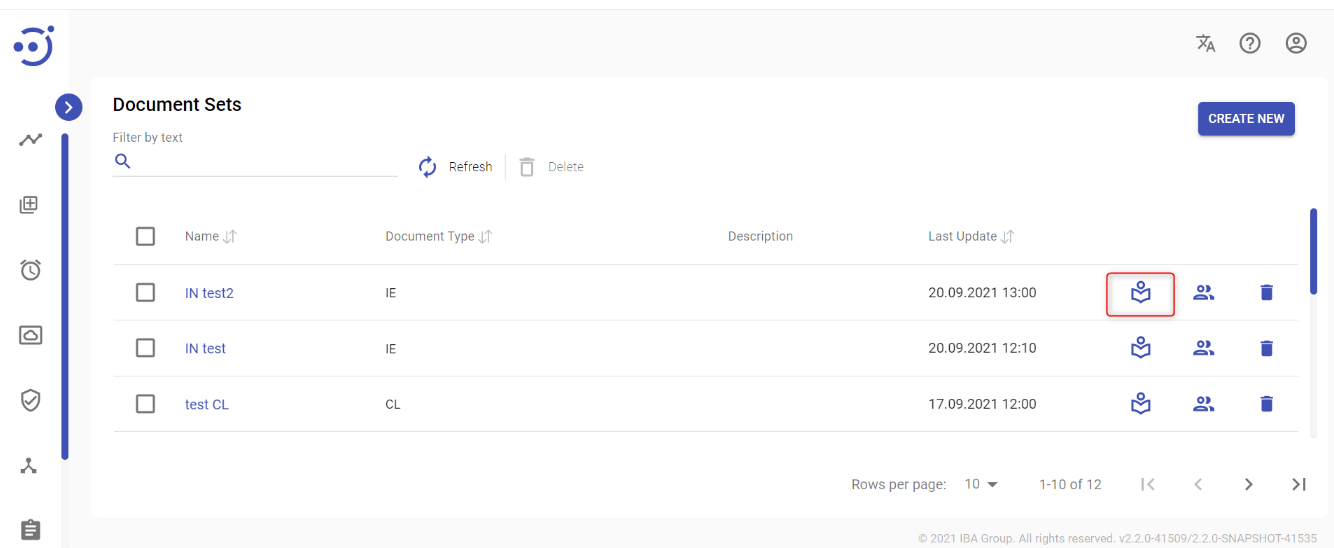


To delete a document set, you need to be granted DocumentSet-DELETE permission. See (v. 2.2) Role Permissions.

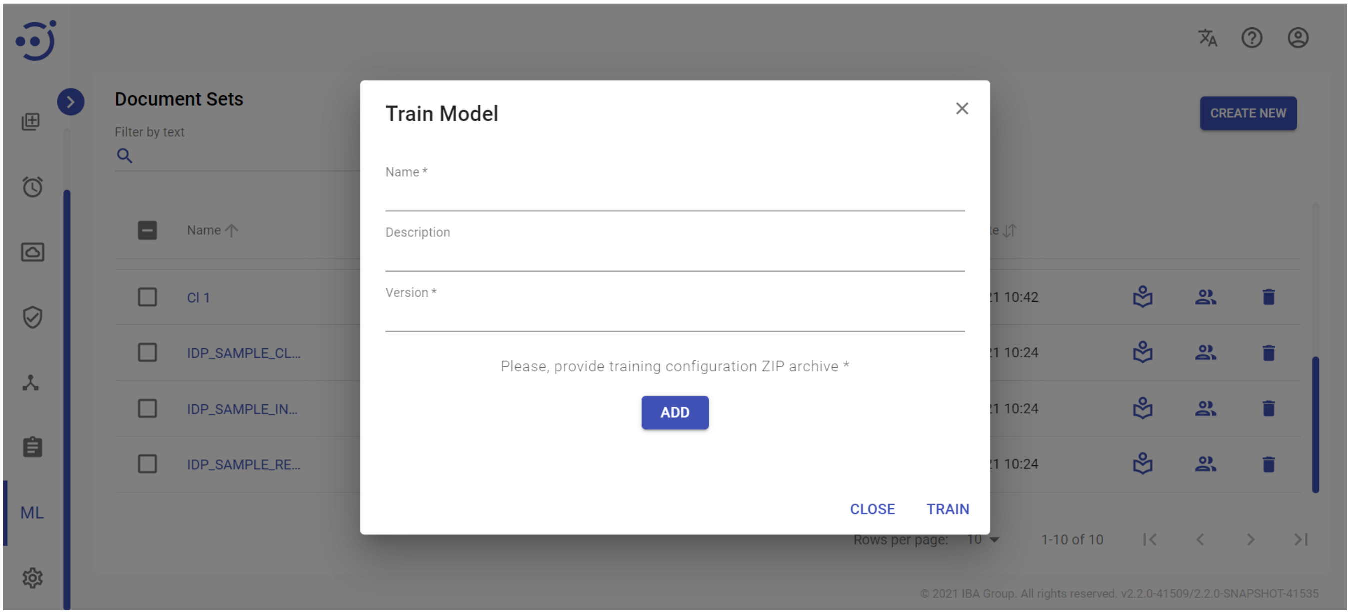
Train Model

To train a model on a prepared training set, you need to:

- click **Train Model** icon.

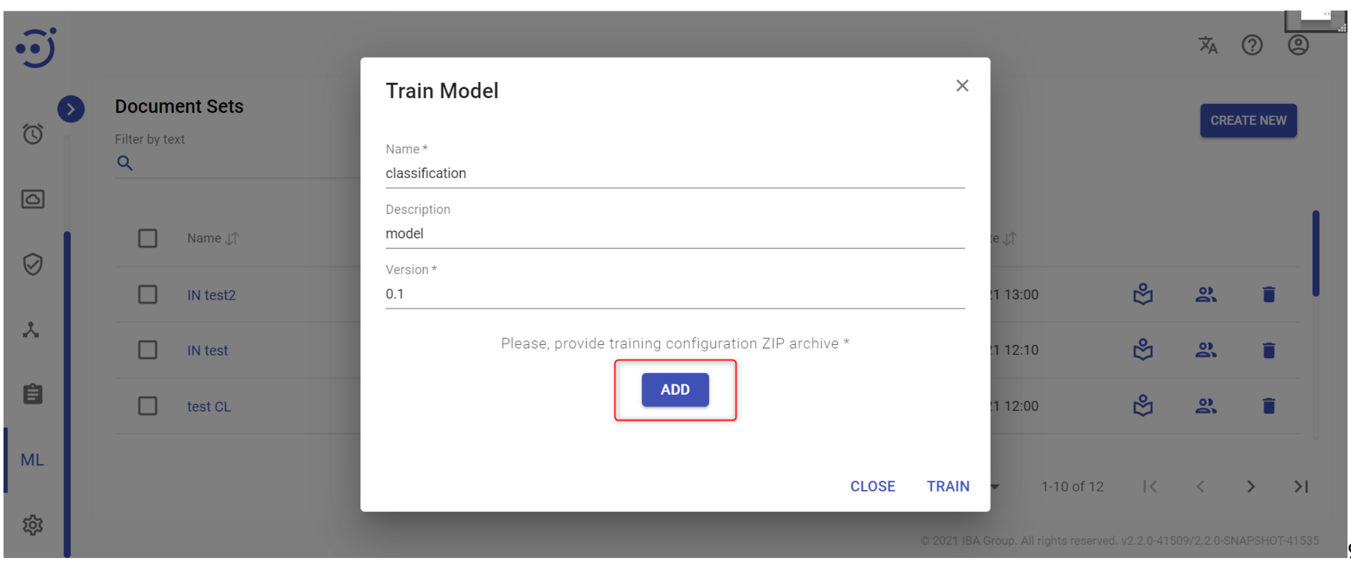


- The following dialog box appears:

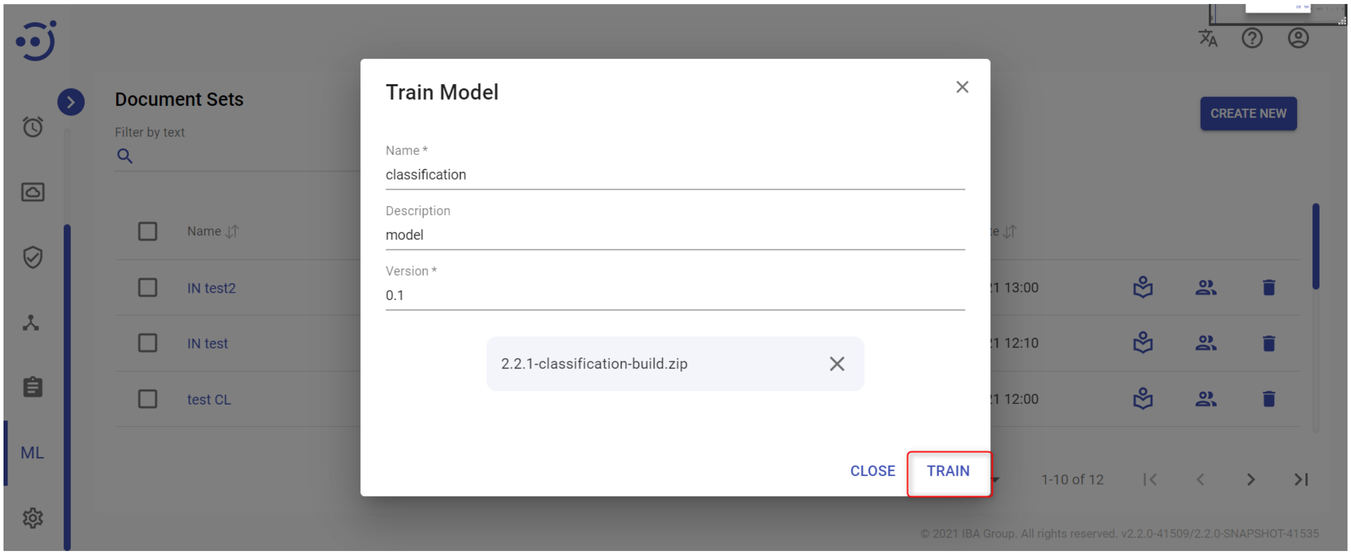


- In the dialogue box you need to provide the following details:
    - **Name** - a name of the model to be trained.
    - **Description** – a short description.
    - **Version** – a model version.
- Click **Add** button to upload a .zip file with training configurations. A file explorer window is displayed. Select a .zip file to be uploaded into the document set and click **Open.**
- A .zip file with configurations for Classification Models should contain one file:
    - **model.json** - required

- A .zip file with configurations for Information Extraction Models may contain up to 4 files:
    - **model.json** - required
    - **labels.json**
    - **base_model_patterns.json**
    - **post_processing_rules.json**



- Click **Train** to start ML model training.



To train a model , you need to be granted MIModel-CREATE permission. See (v. 2.2) Role Permissions.

Model training can also be launched from the Documents page. See (v. 2.2) Documents.

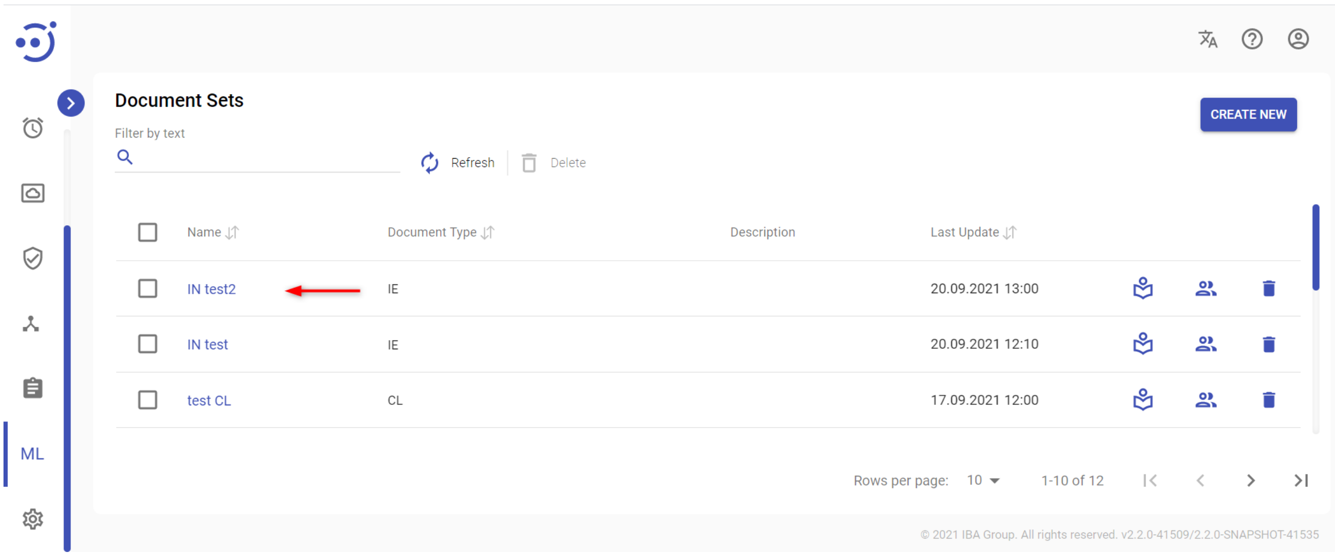
(v. 2.2) Details

- Details

The Documents page contains key information about an existing document set, its processing lifecycle and configuration parameters. You can view/edit document set details, OCR configuration parameters, and manage documents. To view the document set details, you need to be granted DocumentSet-READ permission. See (v. 2.2) Role Permissions.

To access Documents, you need to:

- Navigate to the **Document Sets** page.
- Click on the corresponding **Document Set Name**.



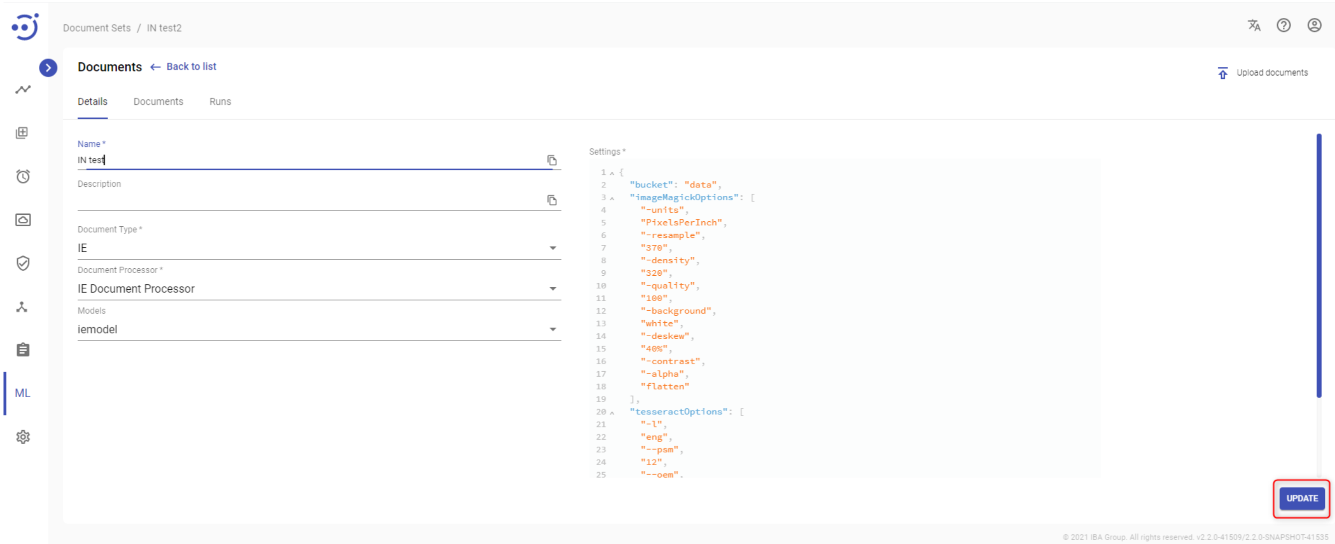
Details

The Details tab displays general settings that are necessary for the document set creation and processing.

You can **view/edit the following information** about a document set on the Details tab:

- Name – the document set name;
- Description – the document set short description;
- Document Type – a human task document type to be selected from the dropdown list;
- Document Processor – an automation process for the document set workflow. The document processor includes converting PDFs into images format, image improvements using ImageMagick scripts, sending images to OCR, sending documents with OCR response to Human Task, processing Human Task response to convert results into Machine Learning input format.
- Model – a ML model used to process the document set.
- Settings - OCR configuration including Storage bucket name, Tesseract options and Image Magick options:
    - document_bucket – name of Storage bucket where OCR results will be saved.
    - tesseractOptions - Tesseract OCR command line options. Please see the external documentation Tesseract Command Line Usage.
    - imageMagickOptions - ImageMagick command line options. ImageMagick tool is used to split pdf by pages and print as images. Please follow Image Magick Command Line Documentation.

- To save the result of editing click **UPDATE.**



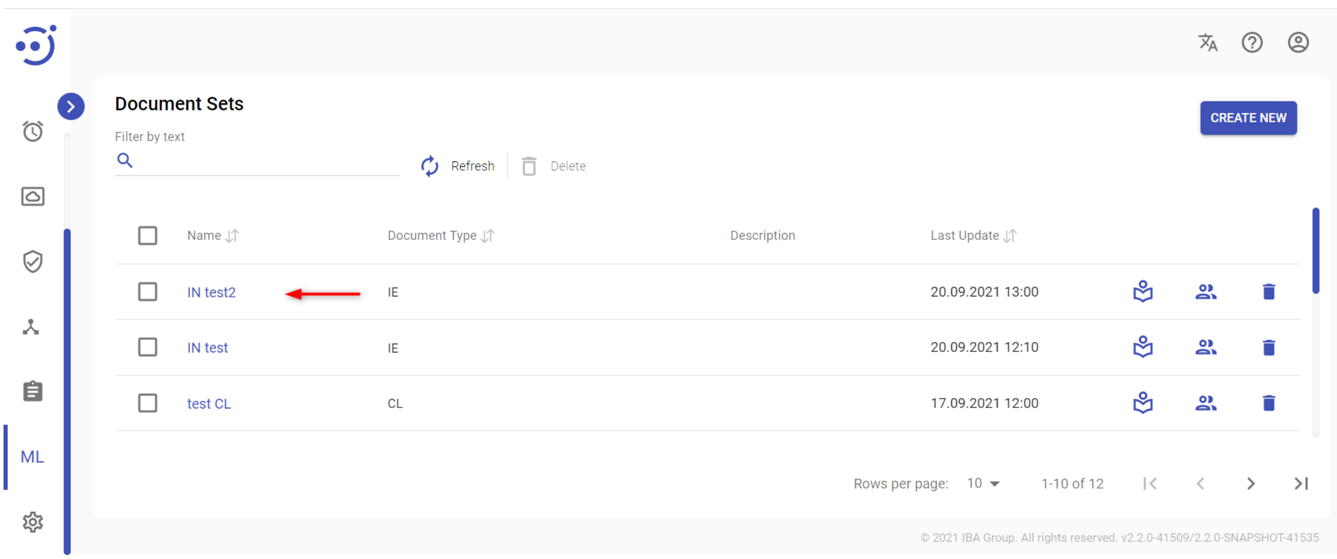
To manage documents within an existing document set click **Documents** tab.

(v. 2.2) Documents

The Documents page contains key information about an existing document set, its processing lifecycle and configuration parameters. You can view/edit document set details, OCR configuration parameters, and manage documents. To view the document set details, you need to be granted DocumentSet-READ permission. See (v. 2.2) Role Permissions.

To access Documents, you need to:

- Navigate to the **Document Sets** page.
- Click on the corresponding **Document Set Name**.

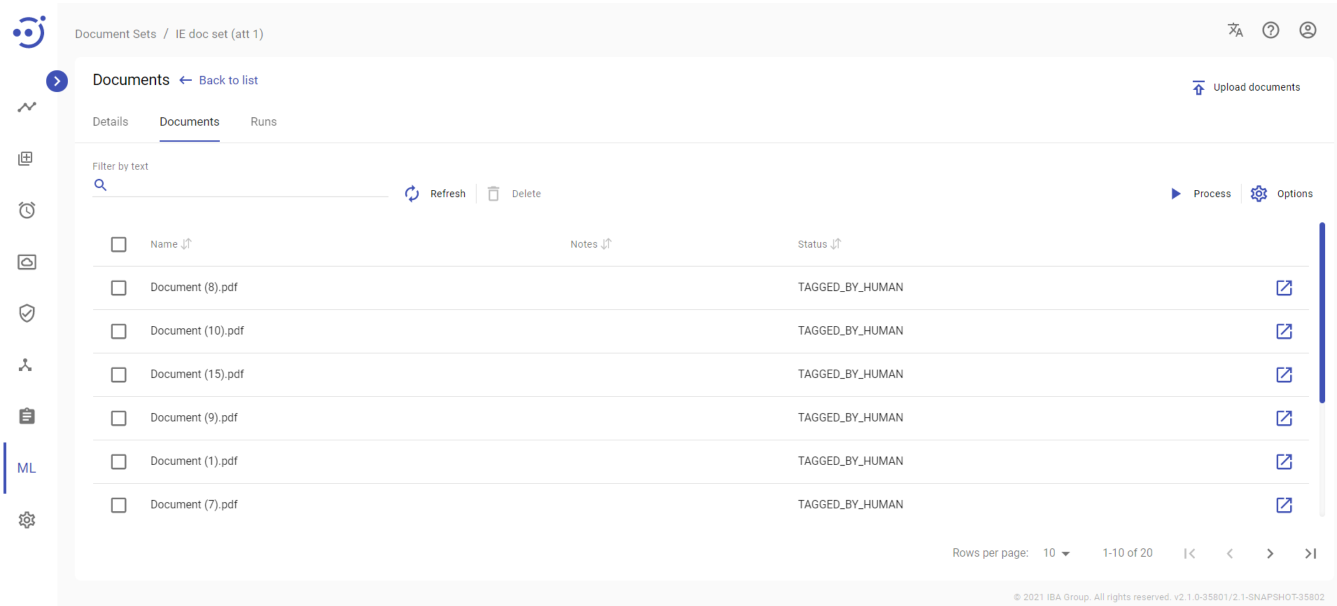


To manage documents within an existing document set click **Documents** tab.

Documents Overview

The **Documents** tab contains key information about all documents within a particular document set, their statuses as well as document inputs and outputs.

You can manage the documents using control buttons. To access the documents of a particular document set, you need to be granted DocumentSet-READ permission. See (v. 2.2) Role Permissions.



Columns Description

- Name - the name of a document within a document set.
- Notes - the notes on a document within a document set.
- Status - the current status of the document processing.

Control icons

- Upload documents - to upload/add documents to an existing document set. Required permission: DocumentSet-UPDATE.
- Refresh - to pull the latest updates from the server.
- Delete - to delete documents from a document set. Required Permission: DocumentSet-DELETE.
- Process - to access dropdown run controls of documents:
    - Re-process - to trigger document processor and prepare document input;
    - Execute Model - to launch tagging by ML model;
    - Move Model to Human - create a Human Task to review/edit (improve) ML model results;
    - Send to Workspace - create a Human Task for tagging;
    - Generate Model Report - generate statistics report of ML model results (both model and human output results are required to generate statistics report);
    - Prepare training set - prepare document set for training.

The run can be done for all documents if no documents are marked with checkmarks, or selected documents if there are marked with checkmarks documents. Required Permission: DocumentSet-ACTION.

- Options - to access dropdown options to manage all documents of a document set:
    - Export Document Set Data- store all files from File Storage folder into files of .zip and export records into a .csv;
    - Clear Document Set - delete all document from a training set;
    - Train Model - launch model training;
    - Import Document Set Data - store (with override) all files from .zip into File Storage, add new records into a datastore using records.csv from .zip, replace all File Storage references with new paths;
    - Open Automation Process Runs - opens document processor Runs page. See (v. 2.2) Automation Process Run.
- Open Document - to view/edit human and model output of a document. Required Permission: DocumentSet-READ.

Filter by text

Filtering allows you to search the documents by its Name, Notes and Status.

Sorting

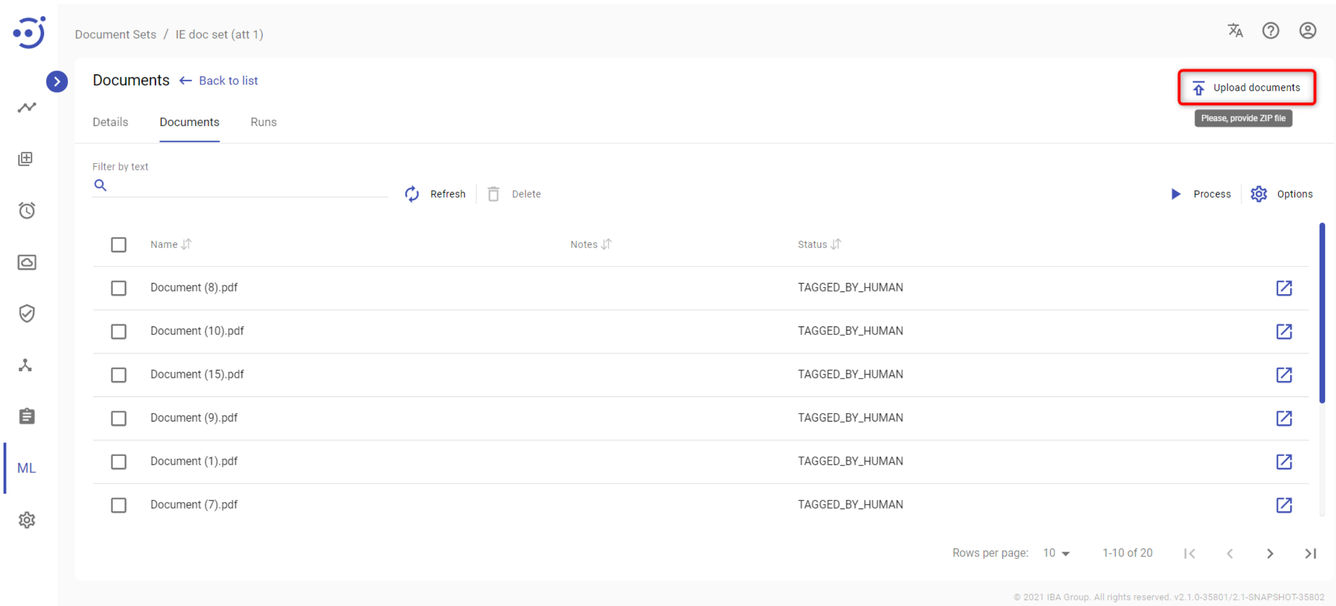
Ascending/descending sorting is allowed for the Name, Notes and Status columns.

Manage Documents

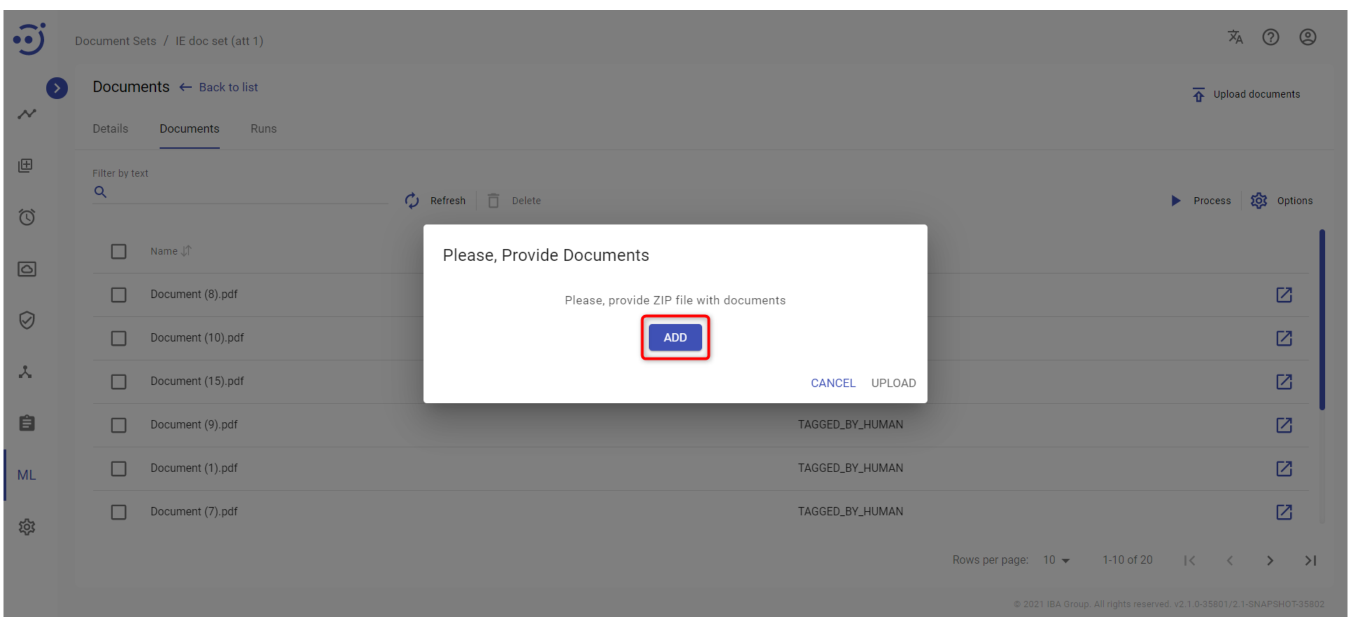
Upload Documents to a Document Set

To add documents to an existing document set, you need to:

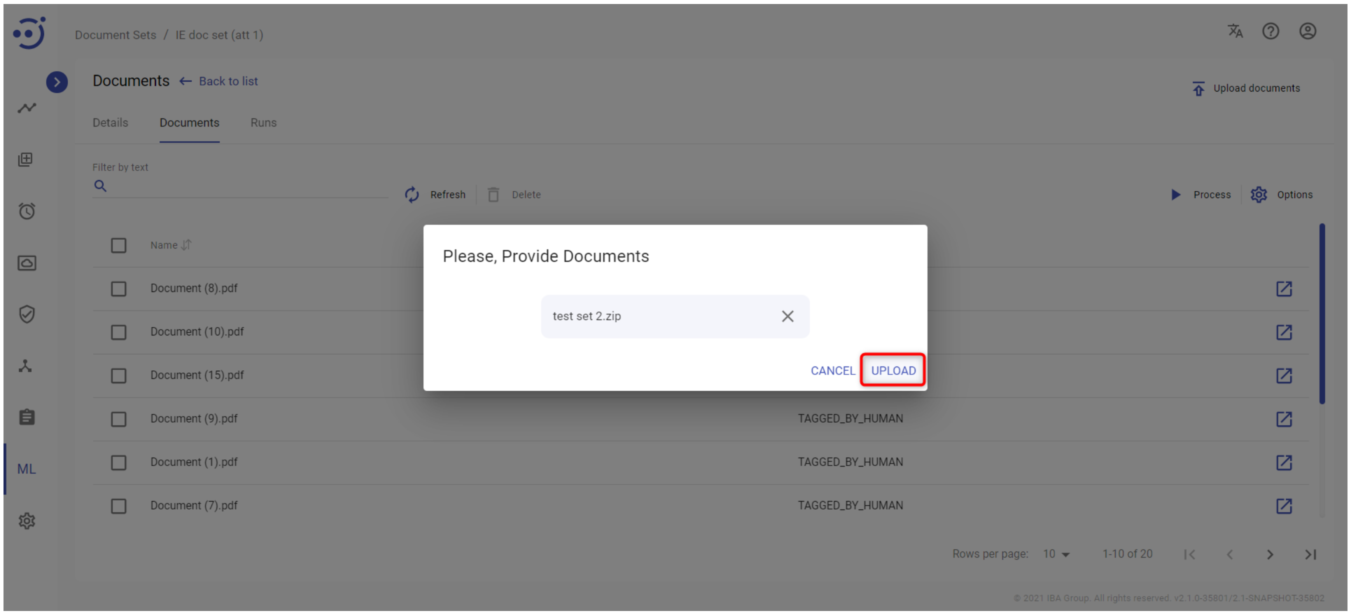
- Navigate to the **Documents.**
- Click **Upload documents.**



- In the pop-up window click **ADD** button to upload a .zip file with documents.



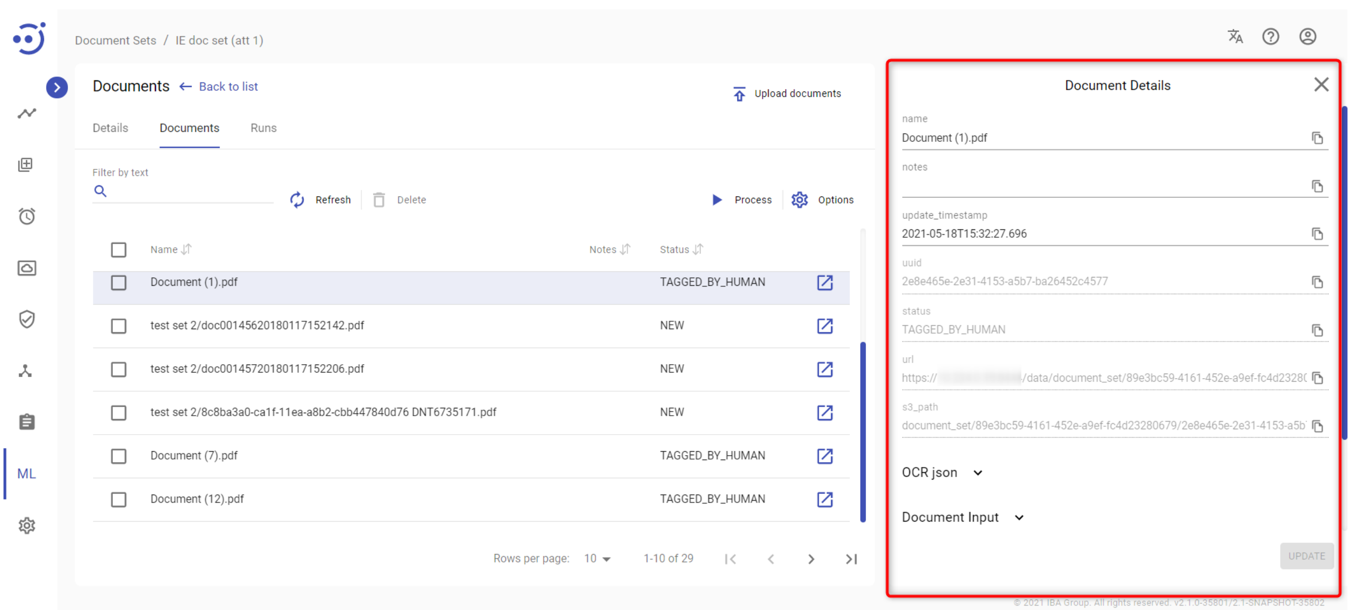
- A file explorer window is displayed. **Select a .zip file** to be uploaded into the document set and click Open.
- Click **UPLOAD**. The documents from the .zip file are added to the document set.



To upload documents to an existing document set, you need to be granted DocumentSet-UPDATE permission. See [(v. 2.2) Role Permissions](#).

Edit Document Details

To view/edit key information about a document click on the row with the corresponding document. **Document Details** panel is displayed on the right.



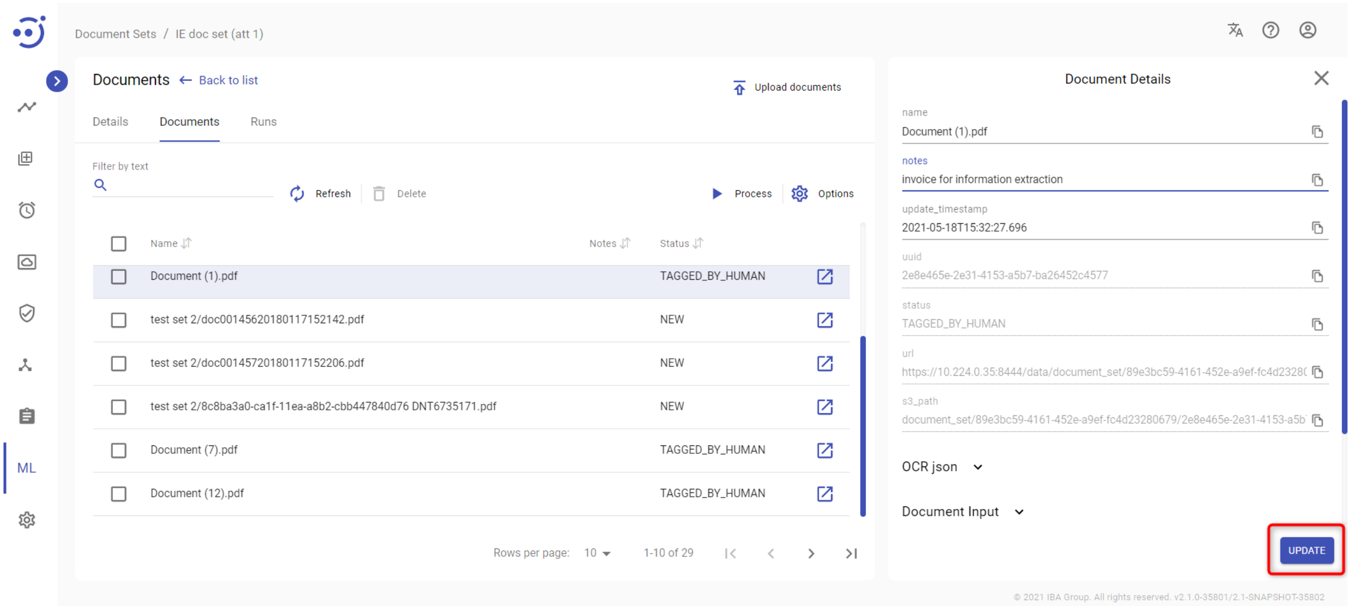
You can **view/edit the following information** about a document on the displayed panel:

- name – the name of a document;
- notes – the notes on a document;
- update_timestamp – the last moment in time when a document was updated in yyyy-MM-dd HH:mm:ss.SSS format;
- uuid – the document unique identifier;
- status – the current status of a document processing;
- url – the document url;
- s3_path – the document path on File Storage;
- OCR json – the result of OCR document conversion in json format;

- Document Input – generated as a result of 'Re-process' action that triggers the document processor and prepares input data for Human Tasks and ML.
- Human Output – generated as a result of tagging a document via Human Task;
- Model Output – generated as a result of ML model processing of a document;

When a document is new, **OCR json, Document Input, Human Output** and **Model Output** details are empty.

To save the result of editing click **UPDATE** button.

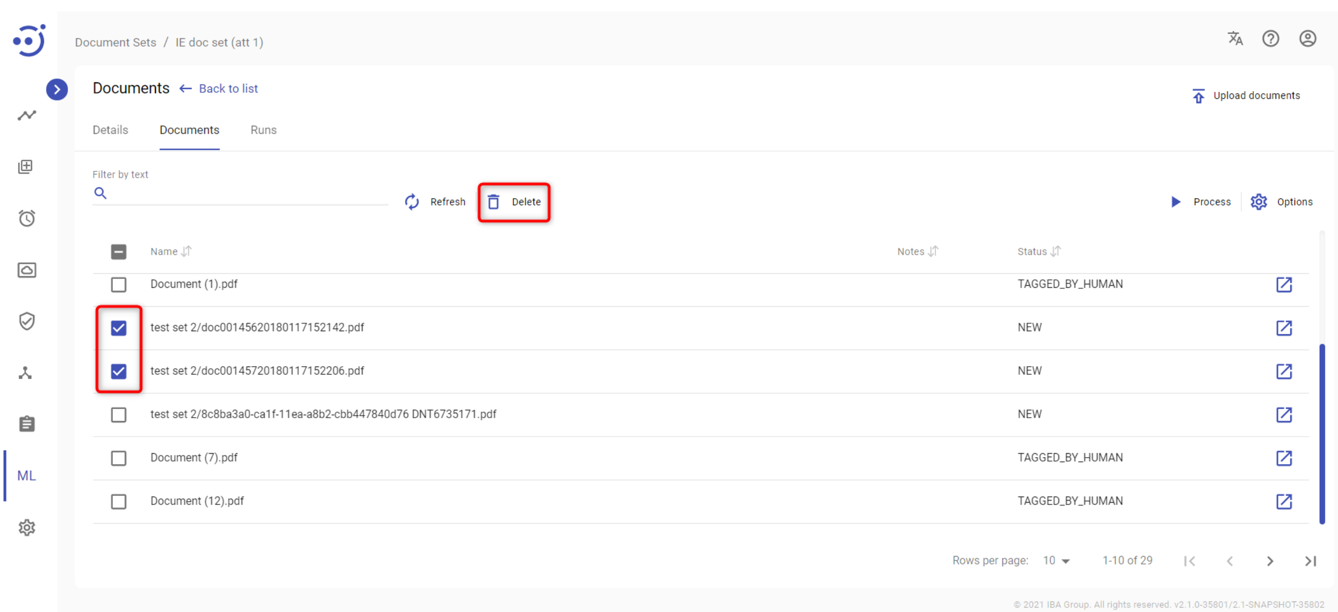


To edit document records, you need to be granted DocumentSet-UPDATE permission. See (v. 2.2) Role Permissions.

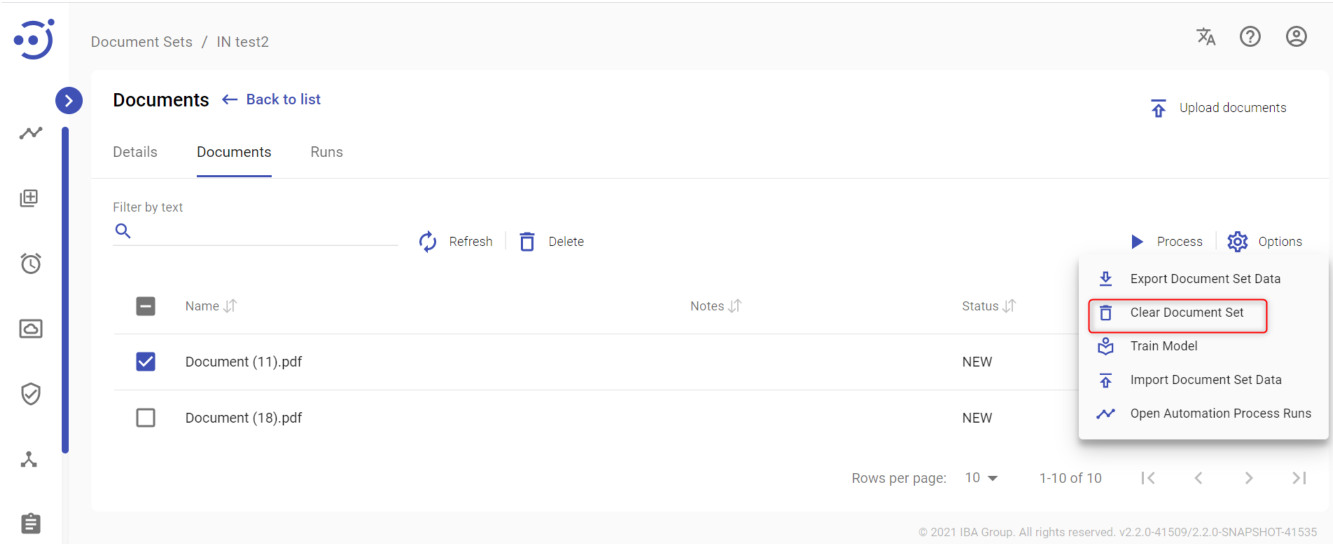
Delete Documents

To delete documents from a document set, you need to:

- **Place checkmarks** next to desired documents.
- Click **Delete** icon at the top of the documents list.
- Confirm deletion.



To delete all documents from a document set, click **Clear Document Set** in Options menu and confirm deletion.



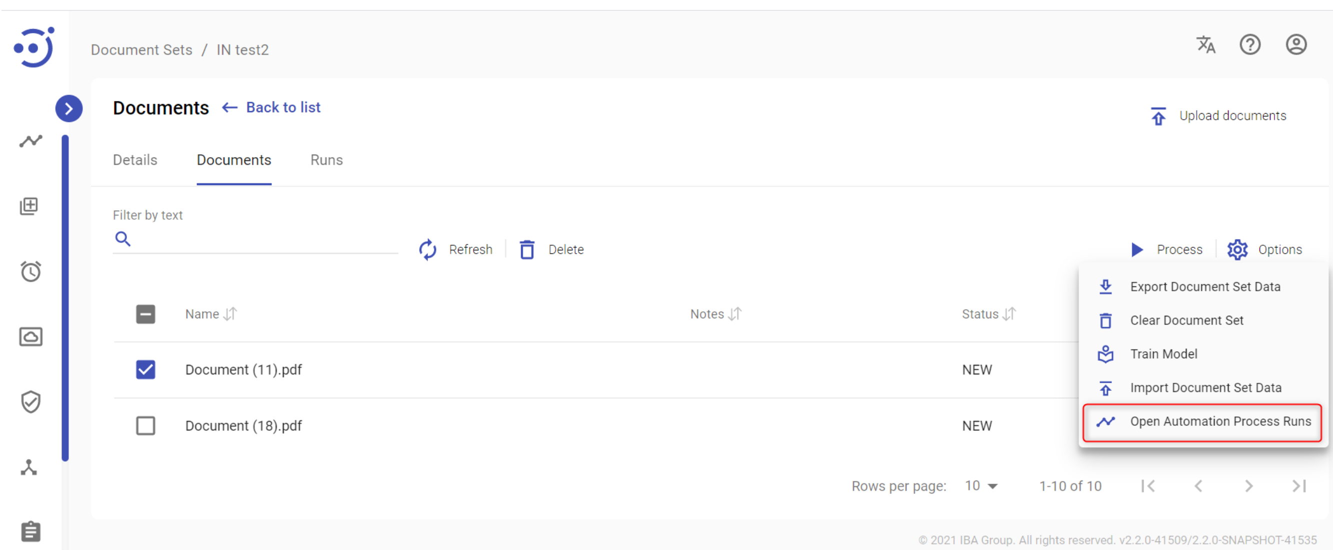
To delete documents, you need to be granted DocumentSet-UPDATE permission. See Role Permissions.

Process Documents

Process dropdown menu encapsulates tools targeted at preparing quality data sets to train ML models.

If no documents are marked with checkmarks on the documents list, the actions will be performed on all documents in a document set. If there are documents marked with checkmarks on he documents list, the actions will performed on the selected documents.

Selecting actions on the **Process** dropdown menu will trigger **Document Processor** with specified actions. When a Document Processor starts working, its progress can be monitored in Runs Management and Automation Process Runs. **Automation Process Runs** can be accessed from **Options** dropdown menu:

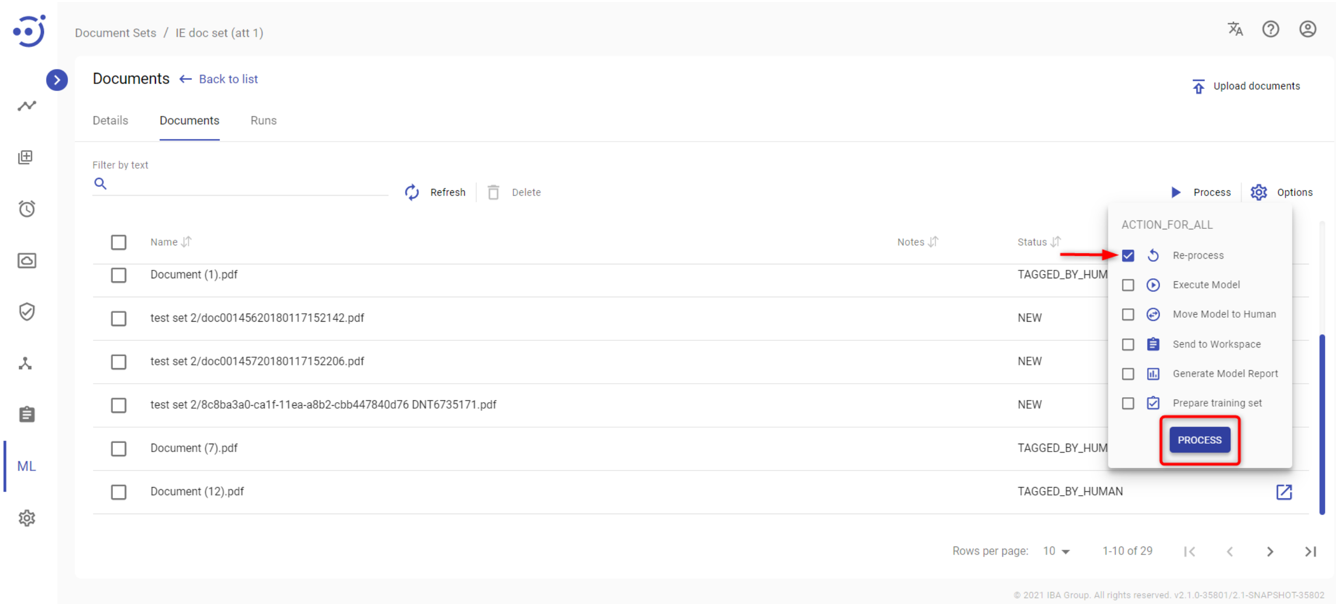


To process documents you need to be granted DocumentSet-ACTION permission. See (v. 2.2) Role Permissions.

Prepare Document Input for Tagging

To perform OCR conversion of documents and prepare document input for tagging, you need to:

- Click **Process** icon at the top of documents list.
- Place a checkmark next to **Re-process** on the dropdown menu.
- Click **PROCESS** button.
- Confirm your action.



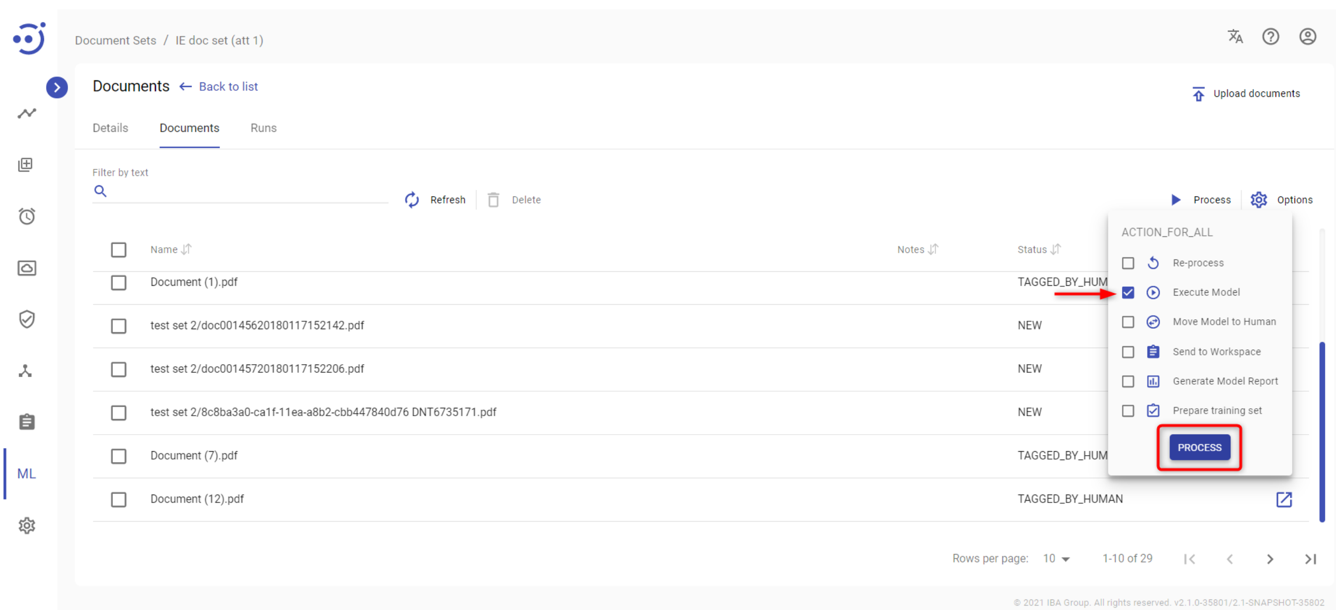
As a result of Re-process action **OCR json** and **Document Input** details are generated and can be viewed on Document Details panel. This data contains the result of OCR in an appropriate format.

Tag Documents by Model

Document Input generated as a result of Re-process action can be used for tagging a document by a ML model if such model already exists.

To launch document tagging by a ML model, you need to:

- Click **Process** icon at the top of documents list.
- Place a checkmark next to **Execute Model** on the dropdown menu.
- Click **PROCESS** button.
- Confirm your action.

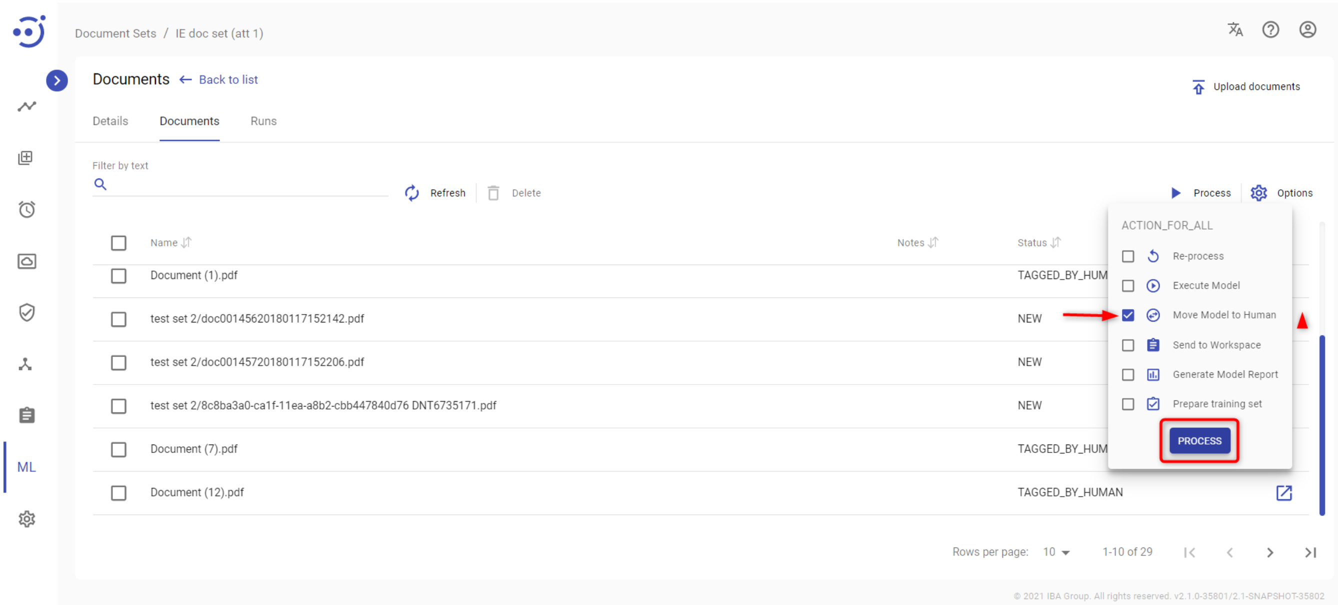


As a result of Execute Model action **Model Output** details are generated for a particular document and can be viewed on Document Details panel.

Review and Edit Model Output

To review and edit tagging performed by a model after Execute Model action, you need to:

- Click **Process** icon at the top of documents list.
- Place a checkmark next to **Move Model to Human** on the dropdown menu.
- Click **PROCESS** button.
- Confirm your action.



As a result of manual tagging **Human Output** details are generated for a particular document and can be viewed on Document Details panel.

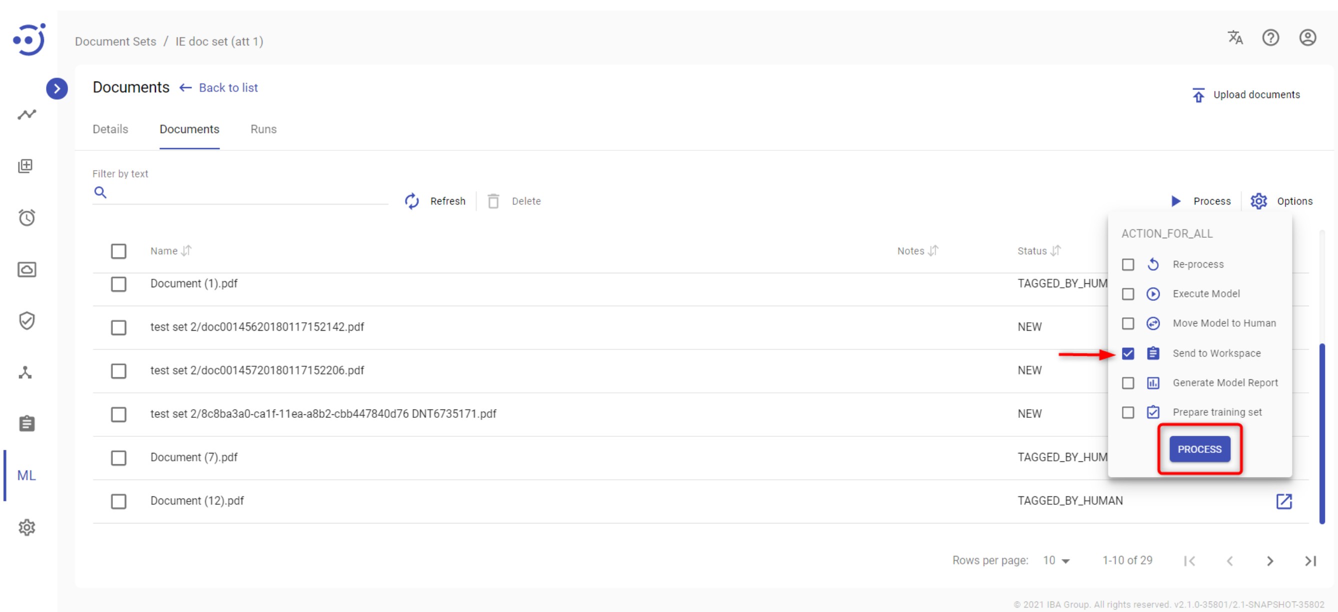
Tag Documents Manually

Document Input generated as a result of a Re-process action can be used for tagging a document in a Human Task.

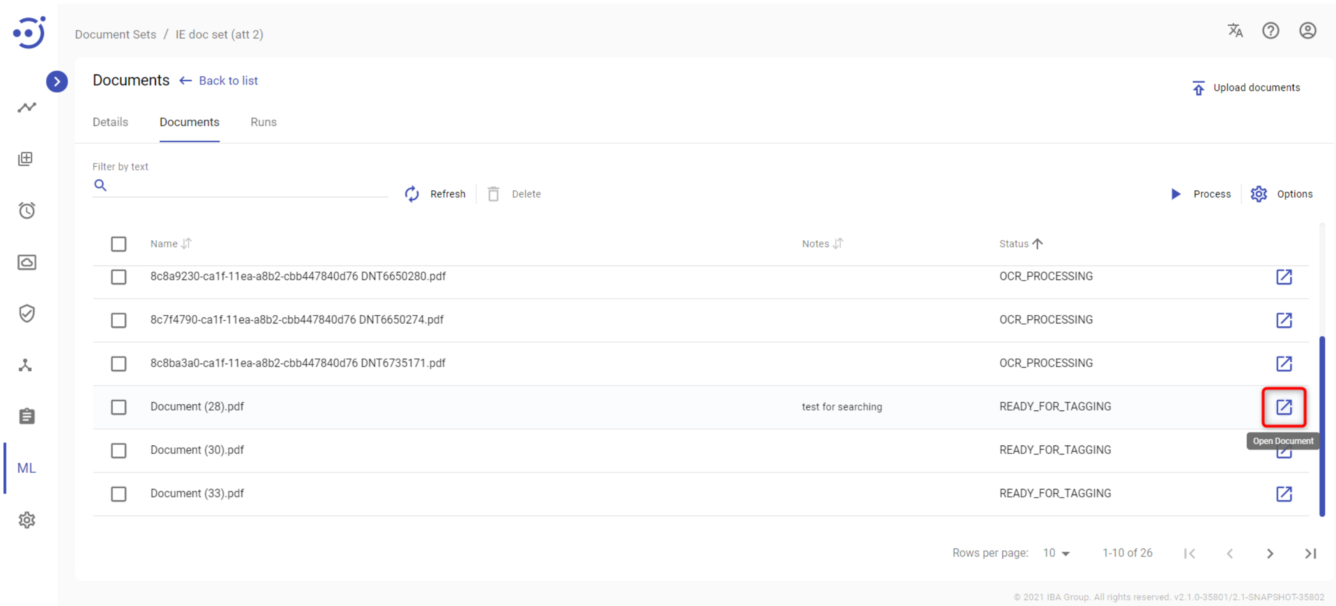
To create a Human Task to perform documents tagging, you need to:

- Click **Process** icon at the top of documents list.
- Place a checkmark next to **Send to Workspace** on the dropdown menu.
- Click **PROCESS** button.
- Confirm your action.

Documents should appear in Workspace as a Human Task under corresponding Document Type and manual tagging can be performed.



Another way to access a Human Task for tagging is to click **Open Document** icon (**Ctrl + Open Document** icon to open in a new tab) in the desired document row of the Documents tab.



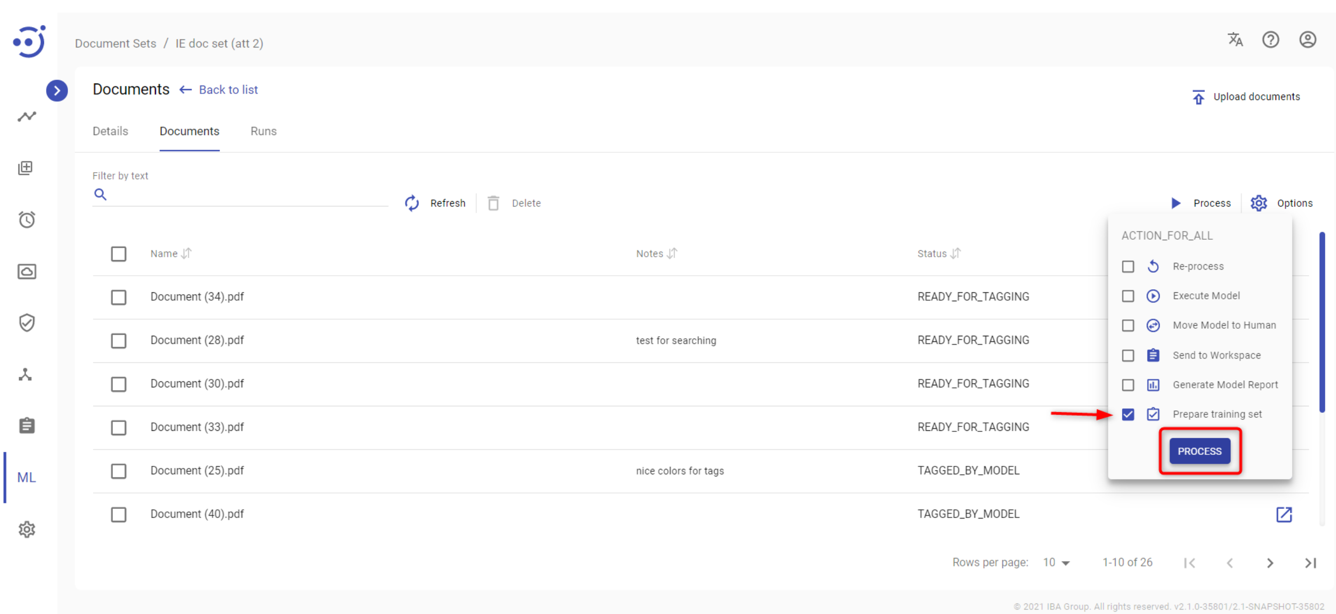
After document is tagged, **Human Output** details are generated for a particular document and can be viewed on Document Details panel.

Prepare training set

When tagging is completed the data needs to be prepared for model training.

To prepare data for model training, you need to:

- Click **Process** icon at the top of documents list.
- Place a checkmark next to **Prepare training set** on the dropdown menu.
- Click **PROCESS** button.
- Confirm your action.

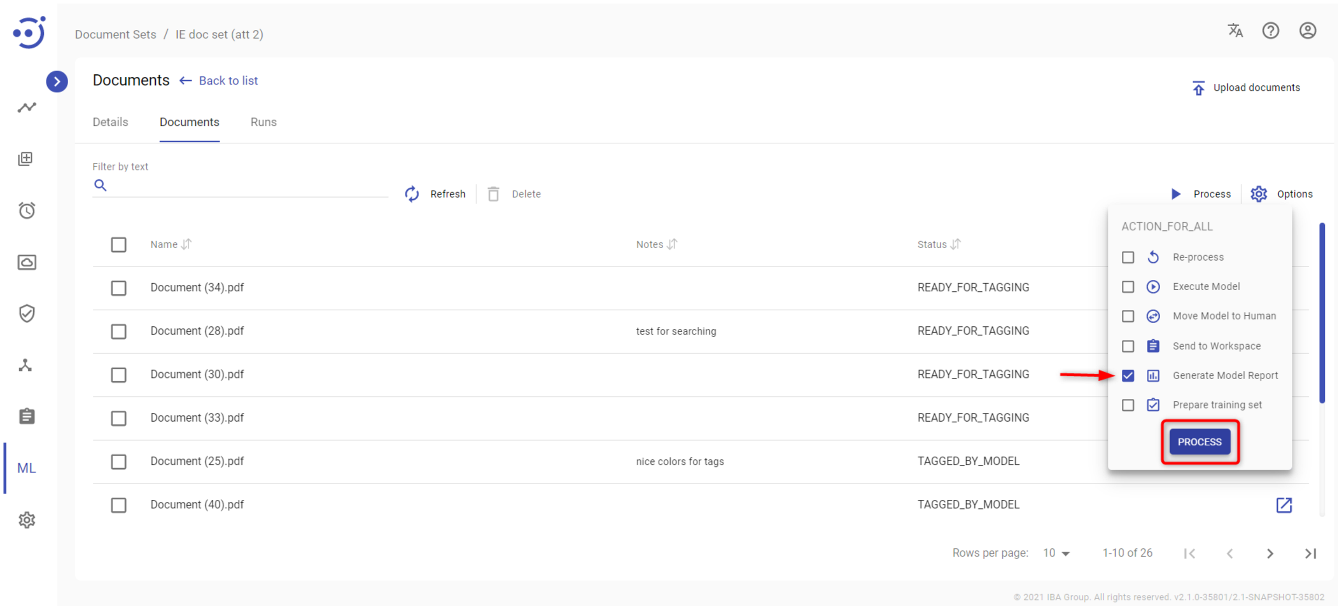


Now the training set is prepared and a ML model can be trained.

Generate Model Report

To calculate statistics and evaluate ML model performance, you need:

- Click **Process** icon at the top of documents list.
- Place a checkmark next to **Generate Model Report** on the dropdown menu.
- Click **PROCESS** button.
- Confirm your action

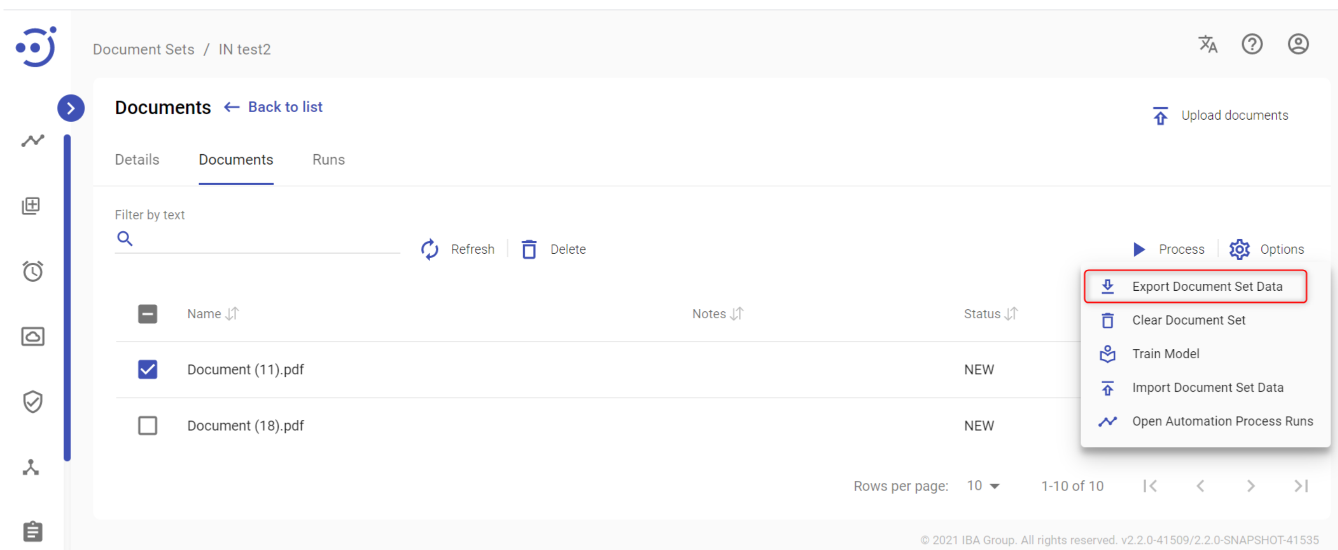


⚠️ Both model and human output results are required to generate statistics report.

Export Document Set Data

A document set can be exported as a .zip package containing a complete set of historical data about the document set including metadata JSON file, initial document set files as well as files created as the result of document processor workflow conversions, a .csv containing all records.

To export a document set click **Export Document Set Data** icon on the **Options** menu.



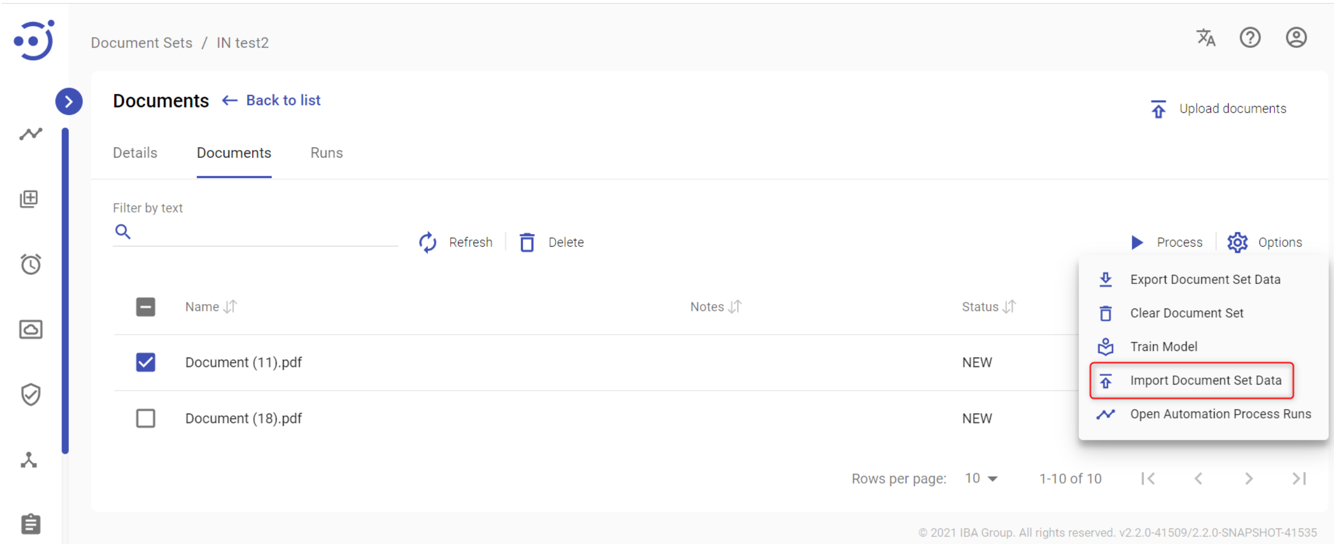
To export a document set, you need to be granted DocumentSet-READ permission. See (v. 2.2) Role Permissions.

You can also export a document set using Export Document Set Data icon on Document Sets page. See (v. 2.2) Document Sets.

Import Document Set Data

A .zip package with a document set that was earlier exported via Export Document Set Data and containing a complete set of files and records can be imported. All files from an imported .zip are saved to File Storage overriding existing files, new records are added to a document set datastore, all File Storage references are replaced with new paths.

To import a document set click **Import Document Set Data** icon on the **Options** menu.

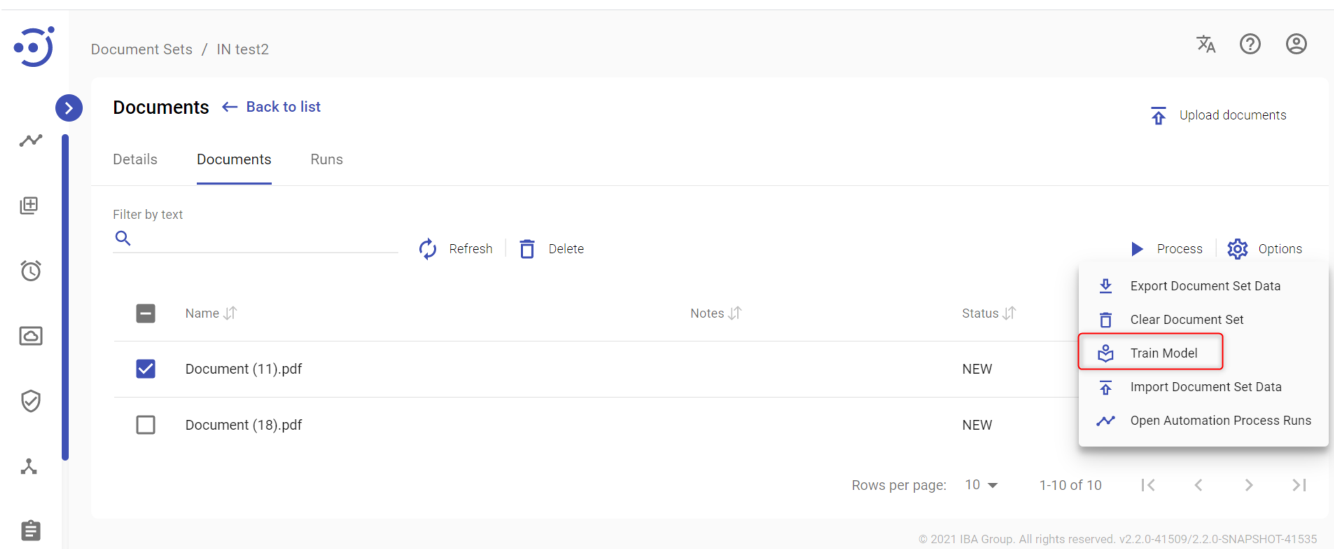


To import a document set, you need to be granted DocumentSet-UPDATE permission. See (v. 2.2) Role Permissions.

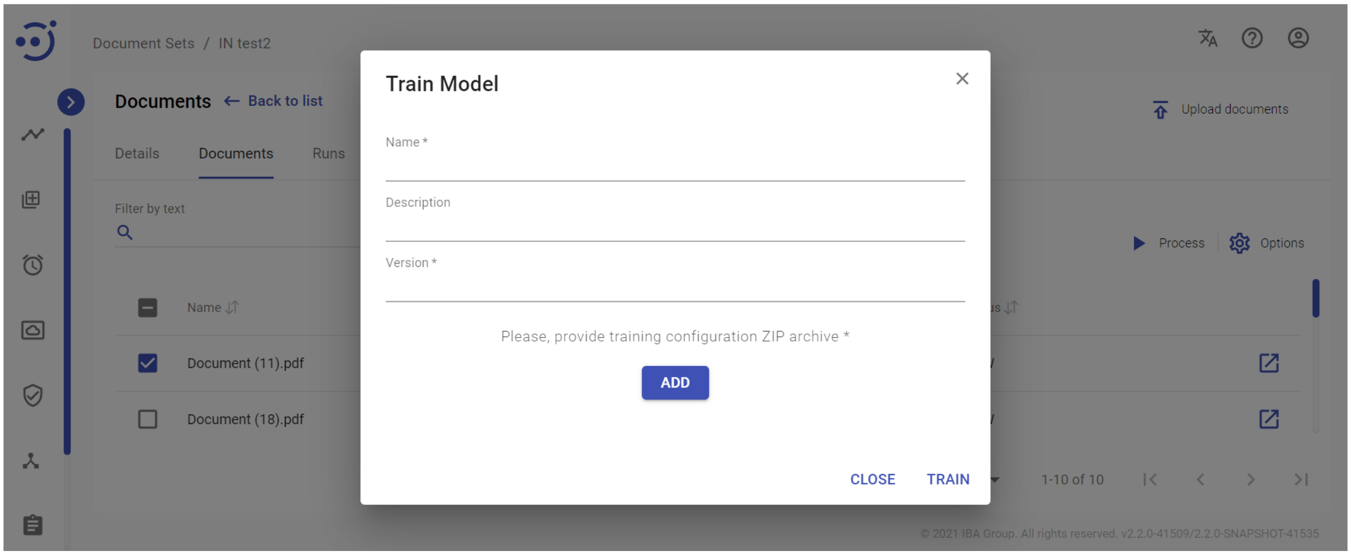
Train Model

To train a model on a prepared training set, you need to:

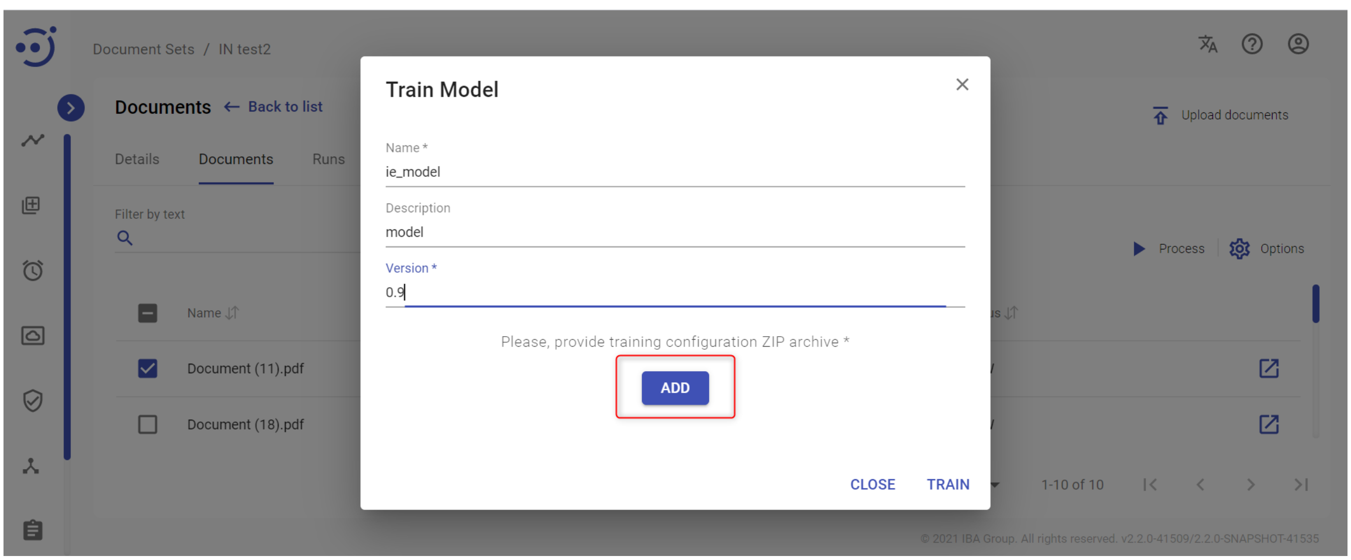
- click **Train Model** icon on the **Options** menu.



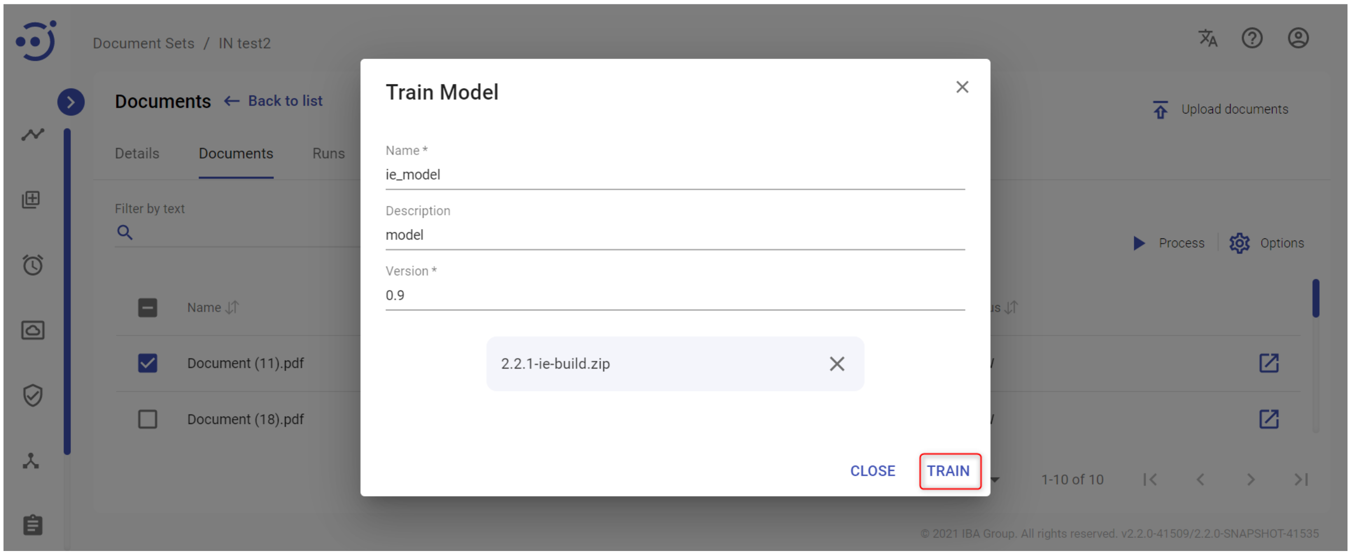
- The following dialog box appears.



- In the dialog box you need to provide the following details:
  - **Name** - a name of the model to be trained.
  - **Description** – a short description.
  - **Version** – a model version.
- Click **Add** button to upload a .zip file with training configurations. A file explorer window is displayed. Select a .zip file to be uploaded into the document set and click **Open.**
- A .zip file with configurations for Classification Models should contain 2 files:
  - **model.json**
  - **ocr_fixes.json**
- A .zip file with configurations for Information Extraction Models should contain 5 files:
  - **model.json**
  - **ocr_fixes.json**
  - **labels.json**
  - **base_model_patterns.json**
  - **post_processing_rules.json**



- Click **TRAIN** to start ML model training.



To train a model , you need to be granted MIModel-CREATE permission. See (v. 2.2) Role Permissions.

Model Training can also be launched from the Document Sets page. See (v. 2.2) Document Sets.

Documents Status Lifecycle

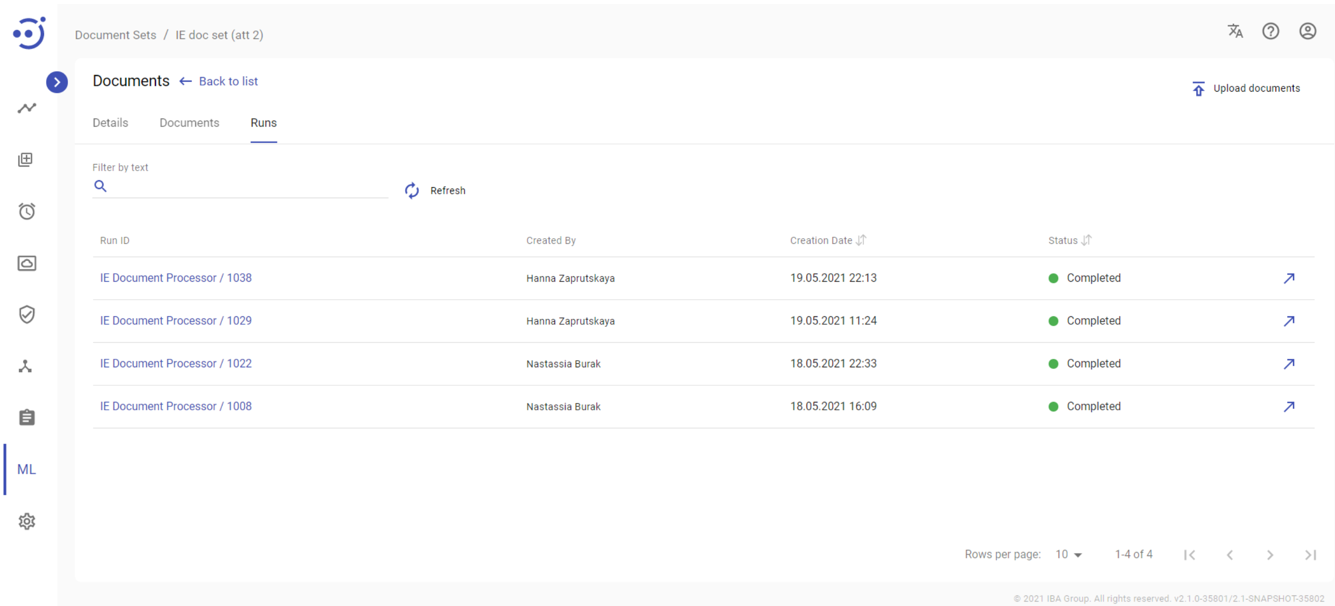
The lifecycle of a document is designed as a series of linked **statuses** that starts with creation of a document and follow it through multiple processing steps. Status changes occur as a document goes through its lifecycle.

When the document is sent to a workflow, it passes the following statuses:

- NEW - a document is created;
- OCR_PROCESSING - a document is being digitized with OCR;
- READY_FOR_TAGGING - a document is converted to be ready for displaying and processing in a Human Task and Machine Learning;
- TAGGING_BY_HUMAN - a document is being processed in a Human Task;
- TAGGING_BY_MODEL - a document is being processed by a Machine Learning model;
- TAGGED_BY_HUMAN - processing of a document in a Human Task is completed;
- TAGGED_BY_MODEL - processing of a document by Machine Learning model is completed.
- PREPARED_FOR_TRAINING - a document set is prepared for model training.

(v. 2.2) Runs

The Runs tab contains detailed information about runs performed for this document set, their history, and event log which help users to monitor particular process execution. To view the list of the document set runs, you need to be granted DocumentSEt-READ permissions. See (v. 2.2) Role Permissions.



Each run has its own ID, information about a user who started the Automation Process and start Date/Time and run status (see (v. 2.2) Automation Process Run for all status values).

Filter by text

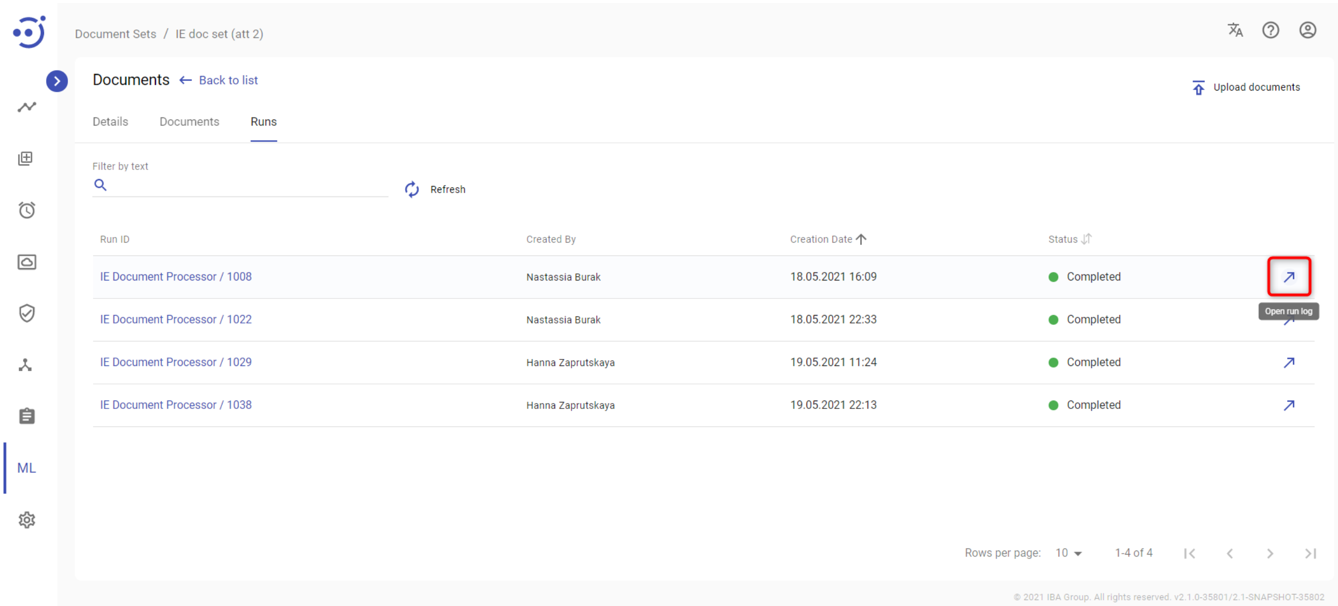
Filtering allows you to search the runs by Run ID, creator full name (column Created By) and Status.

Sorting

Ascending/descending sorting is allowed for Creation Date and Status columns.

Logs

Press the arrow near particular run to view its logs. To access the Automation Processes Run Event Log, you need to be granted AutomationProcess-READ permission. See (v. 2.2) Role Permissions.



For detailed information about Automation Processes Run Event Log see (v. 2.2) Automation Process Run.

(v. 2.2) Models

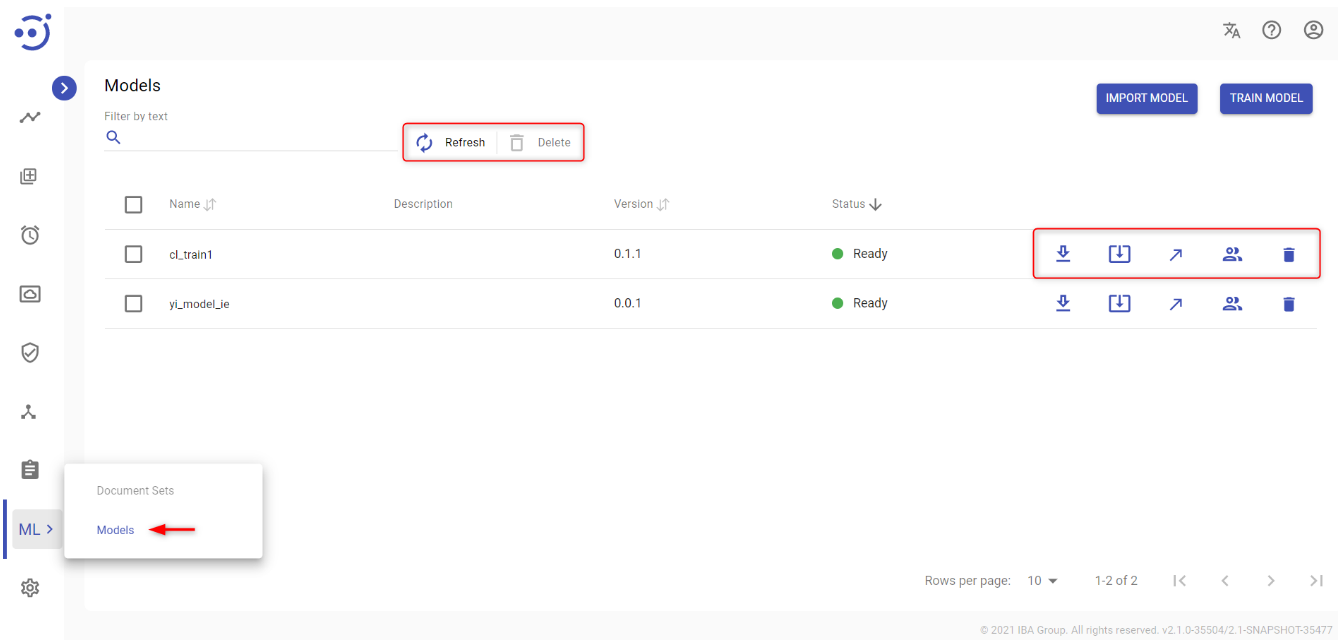
Models module provides users with a single point for ML models management: view all the models registered in the system, train new models and delete existing ones, export and import models.

You can access the module by clicking **Machine Learning Models**. Required Permission: MIModel-READ permission. See (v. 2.2) Role Permissions.

- Export Model
- Import Model
- Train Model
- Model Log
- Model Status Lifecycle

Columns Description

- Name - the Model name.
- Description - the short description of the Model.
- Version - the Model version.
- Status - the Model status.



Control icons

- **Refresh** - to pull the last updates from the server.
- **Export ML Model Package** - to export the model as a single package. Required Permission: MIModel-READ. See (v. 2.2) Role Permissions.
- **Export Training Config** - to export a ZIP archive with a set of configuration files used for training the model. Required Permission: MIModel-READ. See (v. 2.2) Role Permissions.
- **Open Model Log** - to view the model's training log. Required Permission: MIModel-READ. See (v. 2.2) Role Permissions.
- **Delete** - to delete the Model. Required Permission: MIModel-DELETE. See (v. 2.2) Role Permissions.

Filter by text

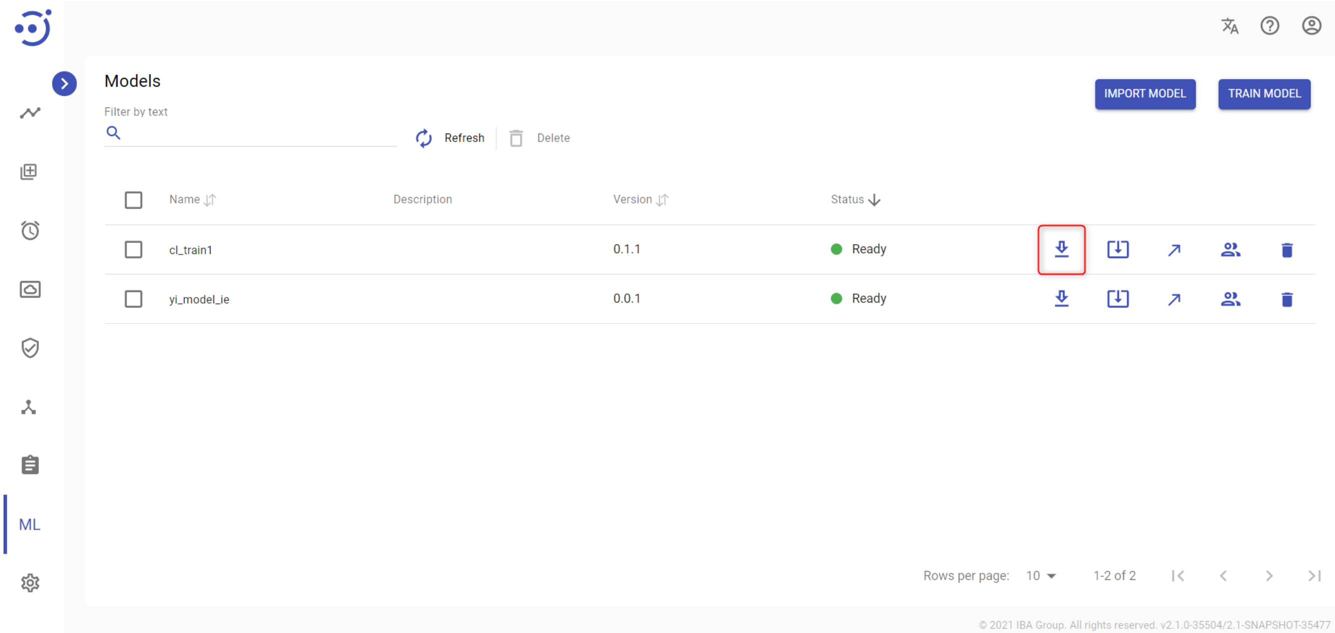
Filtering allows you to search the Model by Name, Description, Version columns.

Sorting

Ascending/descending sorting is allowed for Name, Version, Status columns.

Export Model

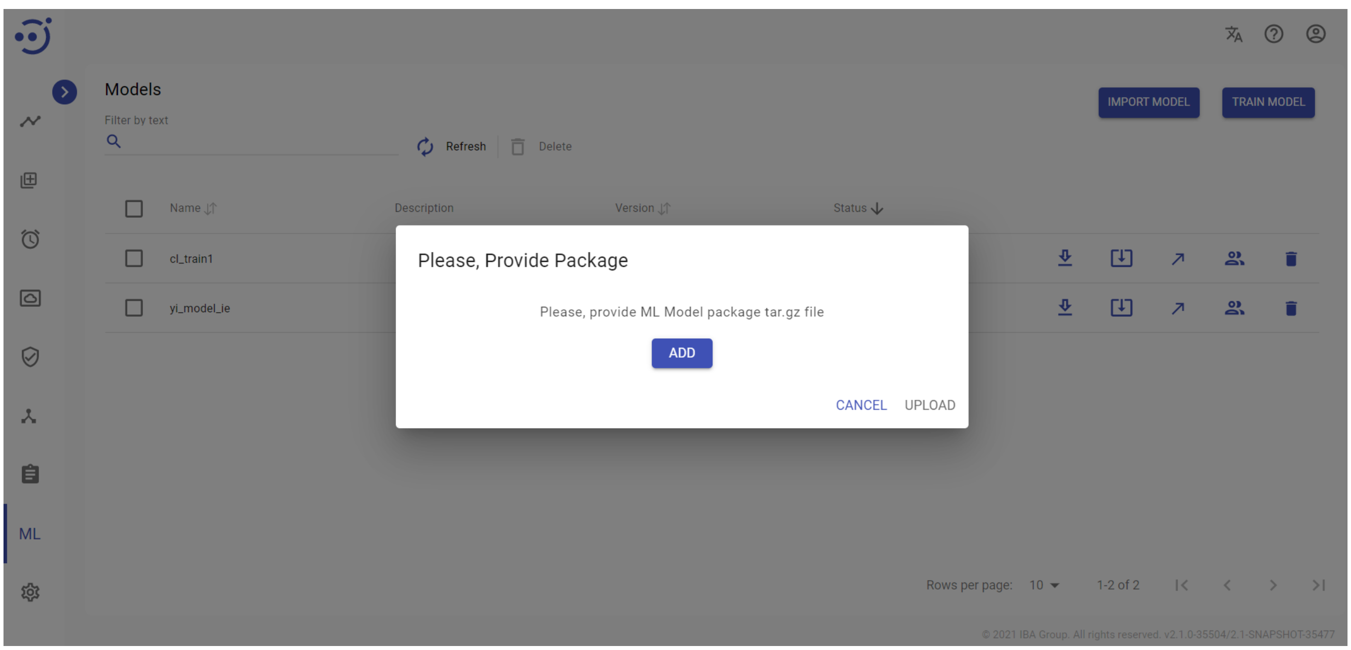
You can export trained model artifacts as an archive file. Click "**Export ML Model package**" icon and **.tar.gz** file will be automatically downloaded:



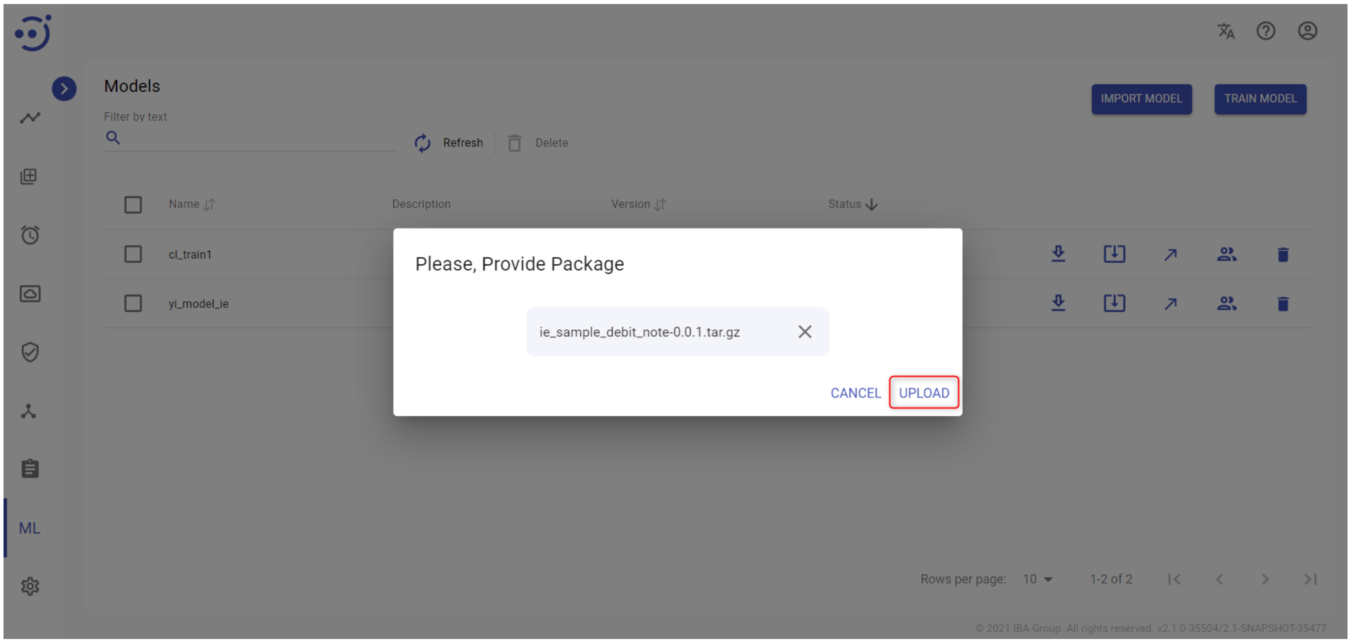
Import Model

EasyRPA allows to import ML models as a package with all the necessary files. To import a model, you need to:

- Click **IMPORT MODEL** button.



Click **ADD** button and select **.tar.gz** file which contains previously exported model artifacts. Then click **UPLOAD** button:



To import a model, you need to be granted MlModel-CREATE permission. See (v. 2.2) Role Permissions.

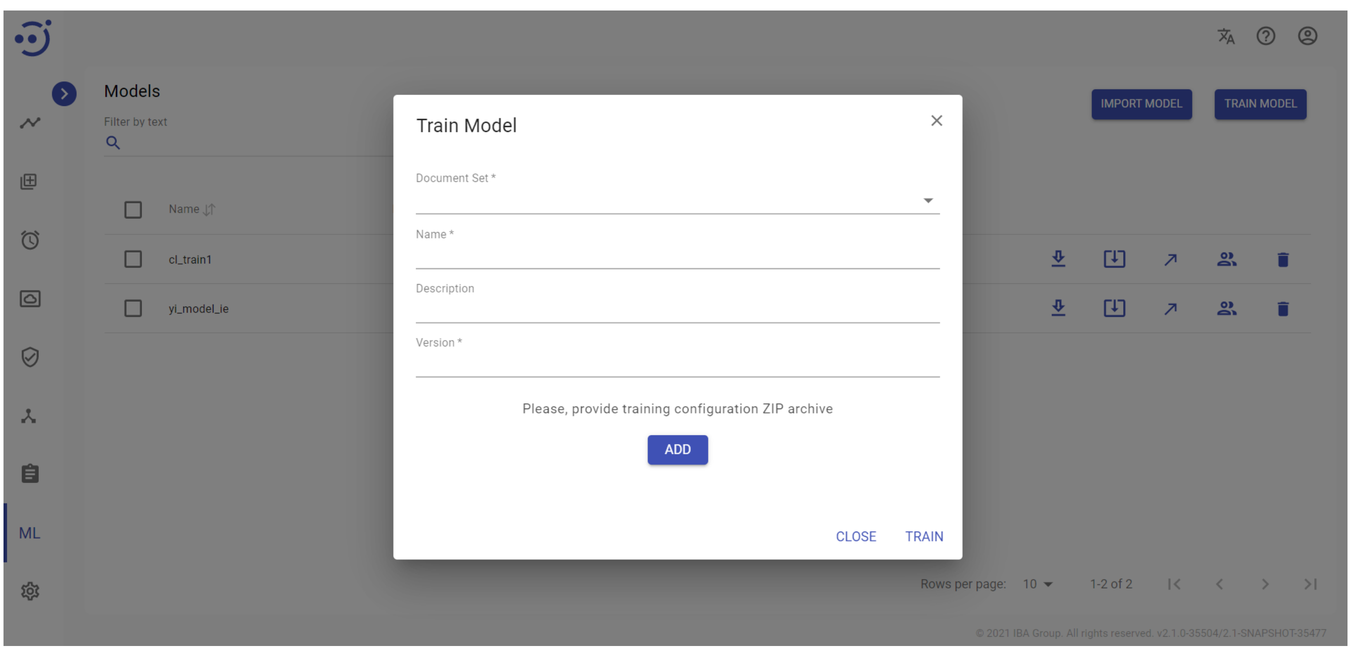
Train Model

EasyRPA allows to train models using tagged data from a Document Set. The ML model is trained, packaged as a single archive, and put into the models repository.

To train a model, you need to:

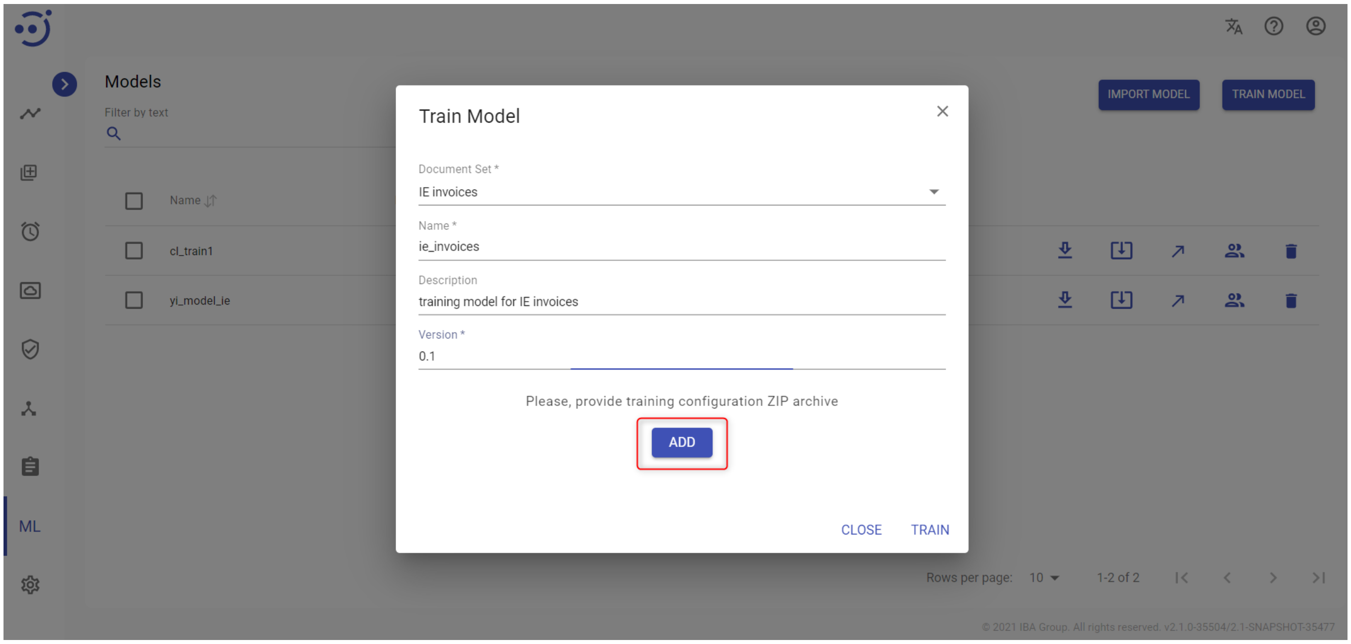
- Click **TRAIN MODEL** button.

The following dialog box appears:

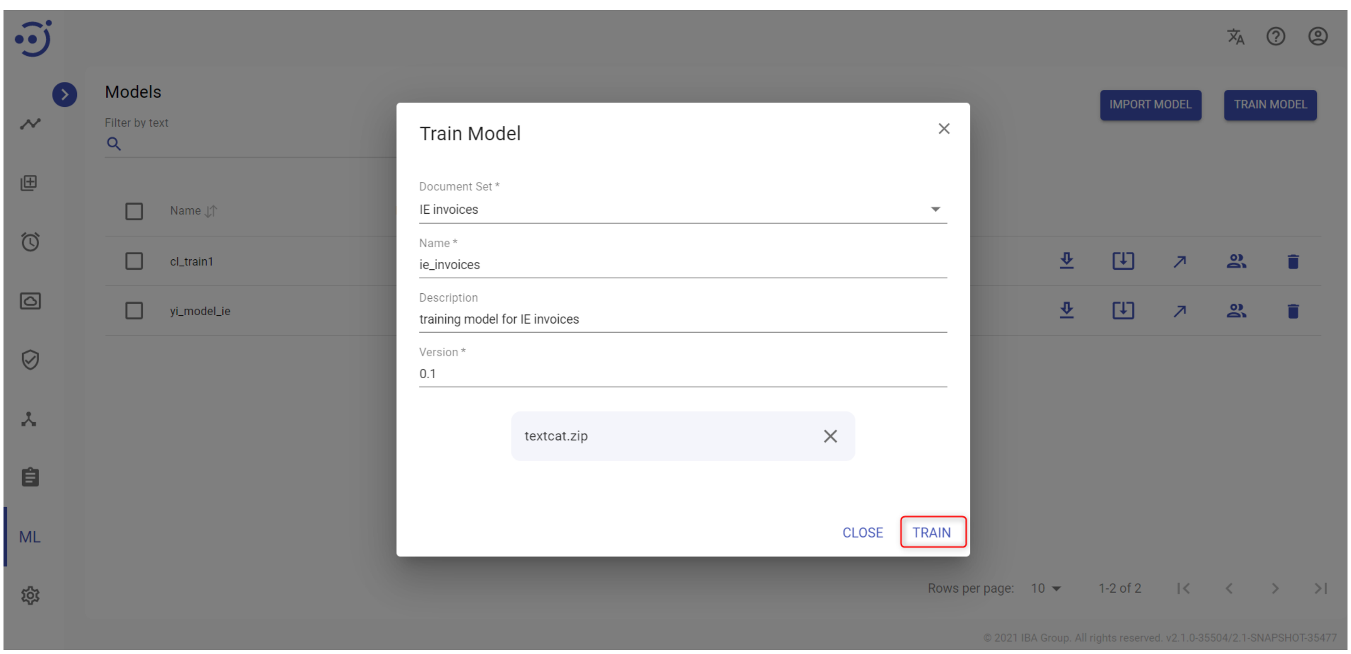


- In the dialog box you need to provide the following details:
  - **Document Set** - the document set with already prepared data for training. See (v. 2.2) Document Sets
  - **Name** - the name of the model to be trained.

- **Description** – the short description.
- **Version** – the model version.
- Click **ADD** button to upload a .zip file with training configurations. A file explorer window is displayed. Select a .zip file to be uploaded into the document set and click **Open.**
- A .zip file with configurations for Classification Models must contain **model.json**
- A .zip file with configurations for Information Extraction Models must contain **model.json** and 3 optional files:
  - **labels.json**
  - **base_model_patterns.json**
  - **post_processing_rules.json**



- Click **TRAIN** to start ML model training.

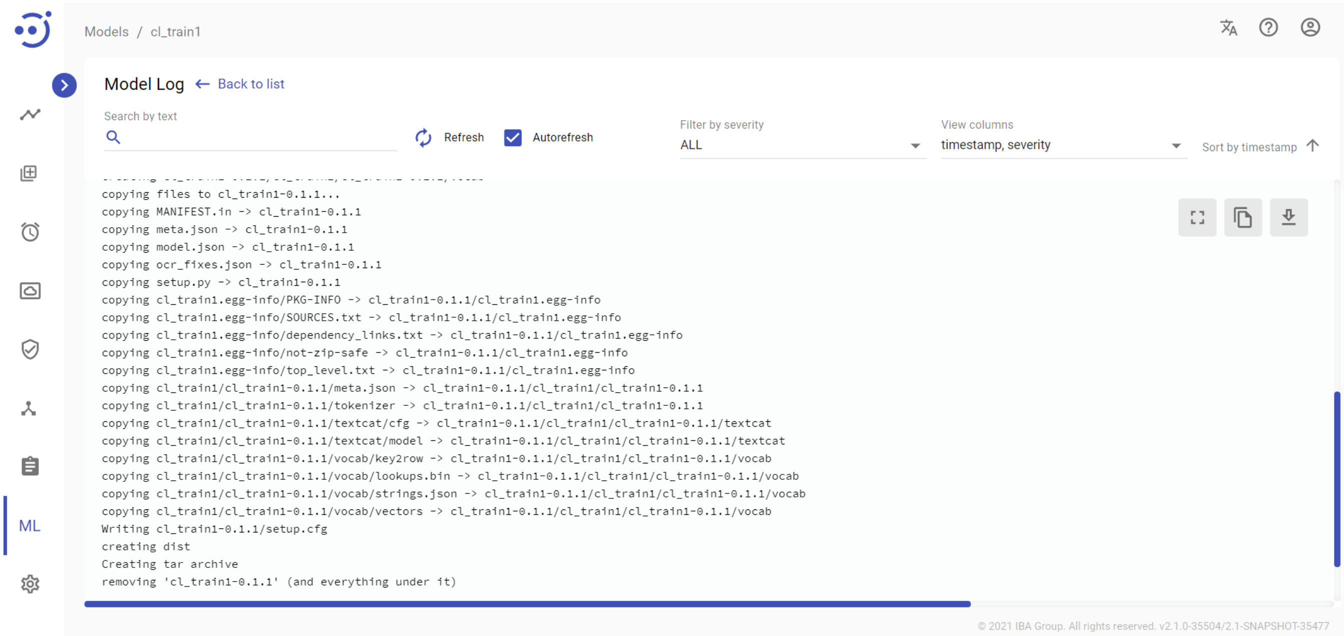


To train a model, you need to be granted MlModel-CREATE permission. See (v. 2.2) Role Permissions.

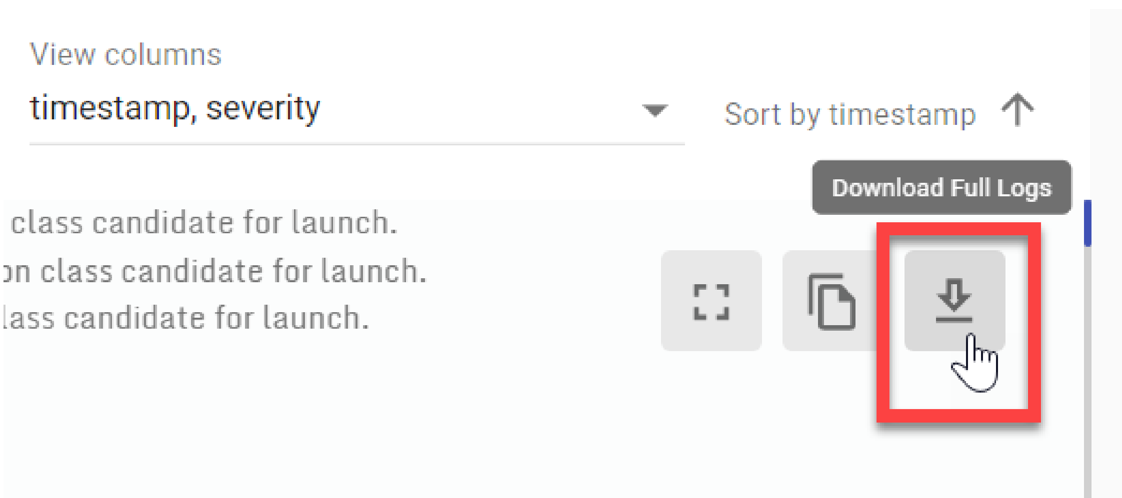
Model Log

The system allows to view the training log for ML models created in the system. To view the log, you need to click **Open Model Log** icon for the specific model.

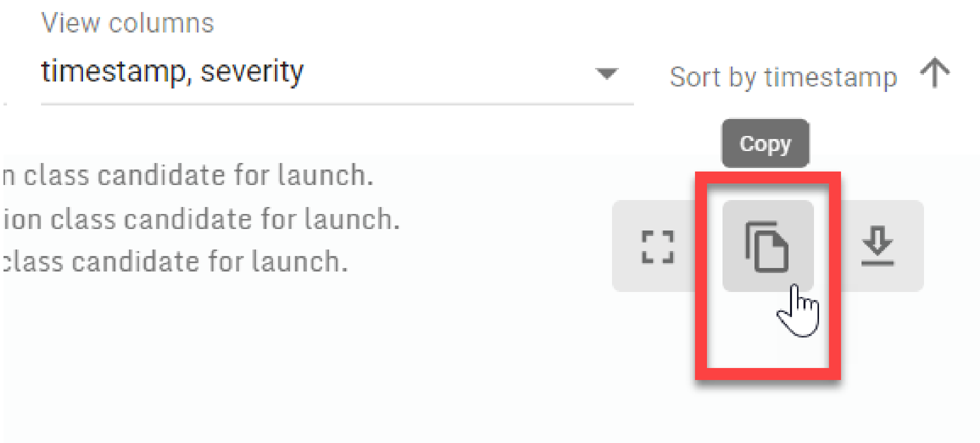
Model logs page is opened:



To download full logs use Download button:



To copy the displayed logs only use Copy button:



To view a model training log, you need to be granted MlModel-READ permission. See (v. 2.2) Role Permissions.

Model Status Lifecycle

- **Ready** - the model is ready to be used for data processing.
- **Submitted for training** - the training process is in the progress.
- **Training failed** - the training process failed, the model is not operational.

Control icons

The following actions can be applied for the model with corresponding statuses:

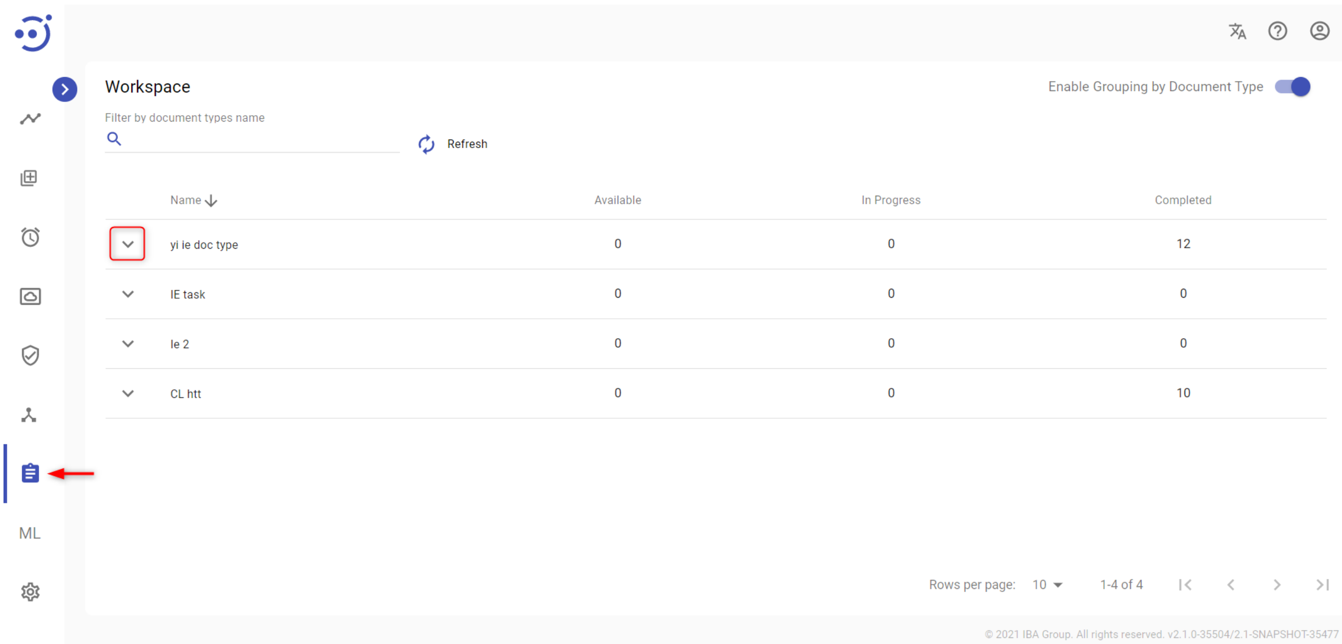
	Export ML Model Package	Export Training Config	Open Model Log	Delete
Ready				
Submitted for training				
Training failed				

(v. 2.2) Workspace

The Workspace is a build-in application for the Easy RPA Control Server that allows users to perform automation process steps that cannot be done by machines and require human involvement, for example, decision-making. In the EasyRPA, such steps are called Human Tasks. The Workspace displays a catalog of the Human Tasks available for execution and grouped by the Document Type.

To see the Human Tasks of the specific Document Type, the user should expand the list by clicking the symbol near the corresponding Document Type.

To see all tasks not grouped by Document Type switch near "Enable Grouping by Document Type".



Columns Description

- **Name** - the Document Type name.
- **Available** - the number of Human Tasks of specific Document Type available for execution.
- **In Progress** - the number of Human Tasks of specific Document Type that a user currently executes.
- **Completed** - the amount of completed Human Tasks of a specific Document Type.

Filtering

- **Filter by document type name** - allows searching for the specific Document Type.
- **Filter by priority** - allows searching for the particular priority of the Human Task.
- **Filter by status** - allows searching the Human Task by its status - Available/In Progress/Completed.

Sorting

Ascending/descending sorting is allowed by the column Name.

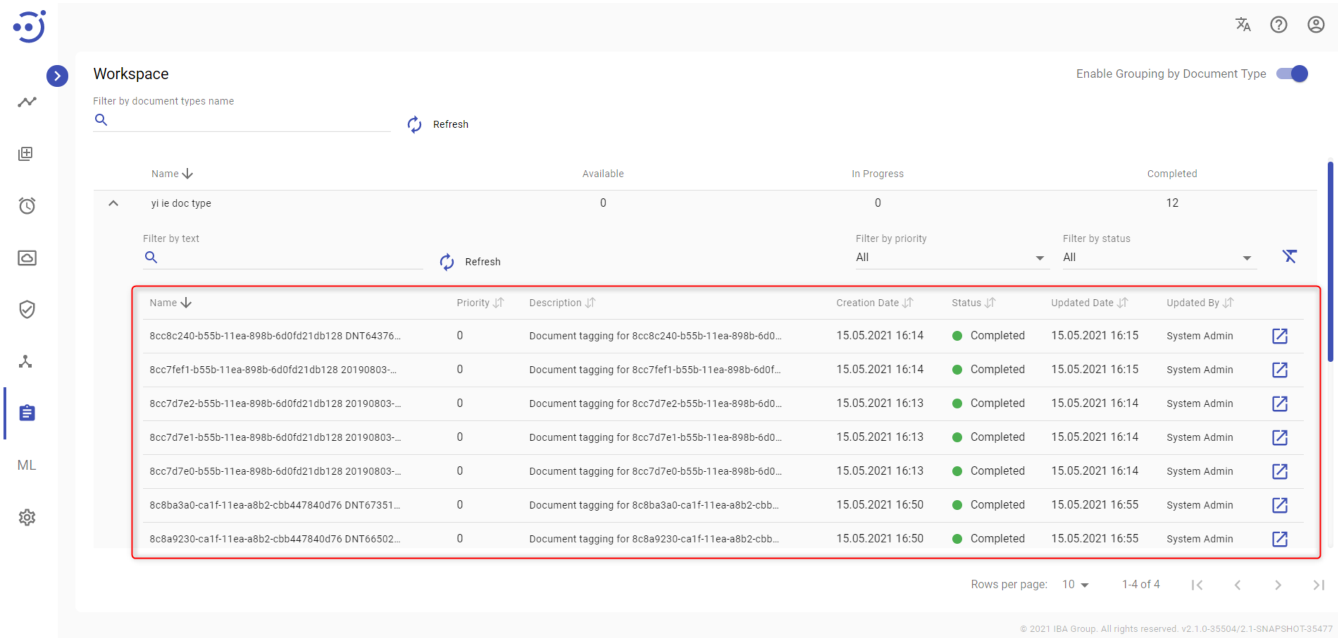
Control Icons

- **Refresh** - to pull the latest changes.

To view human task details, you need to be granted DocumentType-READ permissions. See (v. 2.2) Role Permissions.

Expanded View

In the expanded Document Type, the user can see the catalog of Human Tasks:



Columns Description

- **Name** - the name of the document.
- **Priority** - the priority (0-4) with which the Automation Process will process the Human Tasks.
- **Description** - a short description of the document.
- **Creation Date** - the date and time of the document creation.
- **Status** - the current status of the document - Available/In Progress/Completed.
- **Updated Date** - the date and time of the document updating.
- **Updated By** - the user who edited the document.

Sorting

Ascending/descending sorting is allowed by the columns: Name, Priority, Description, Creation Date, Status, Updated Date, Updated By.

Control icons

- **Start working** - to navigate to the selected document. Required Permission: DocumentType-READ. See (v. 2.2) Role Permissions.
- **Reset** - to reset all filters. Required Permission: DocumentType-READ. See (v. 2.2) Role Permissions.

(v. 2.2) Process Human Task

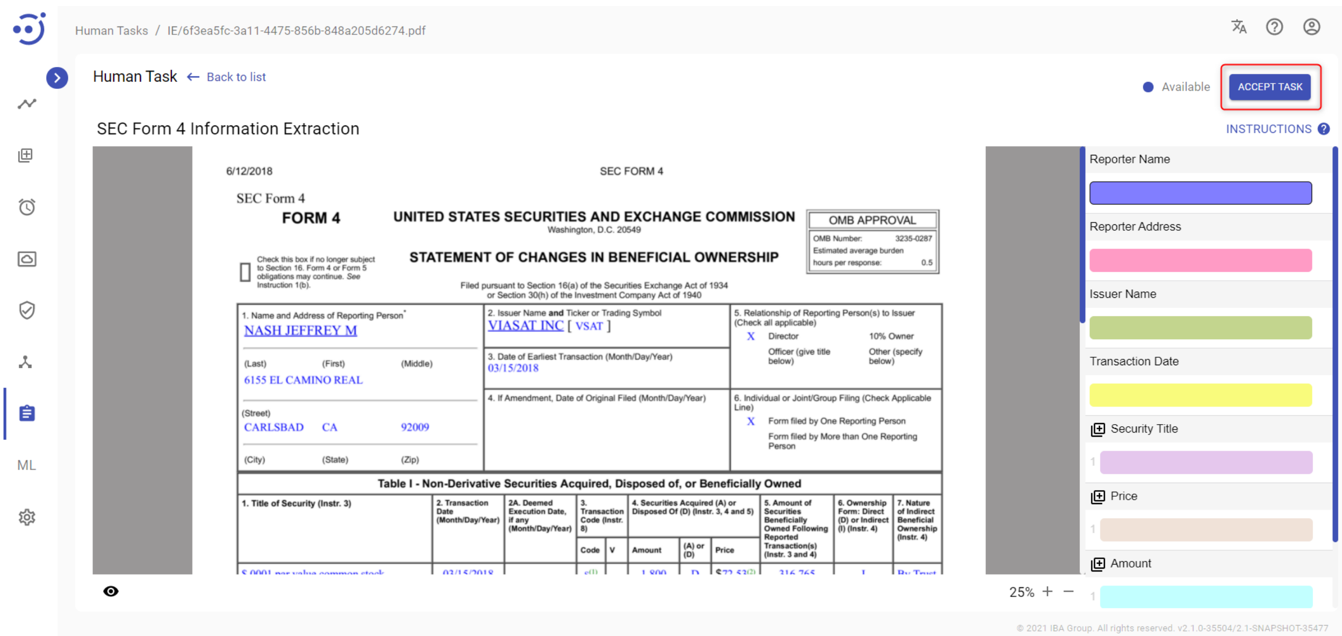
The EasyRPA Control Server supplies several standard Human Task Types:

- Sample Form Task
- Sample Classification Task
- Sample Information Extraction Task

General WorkFlow

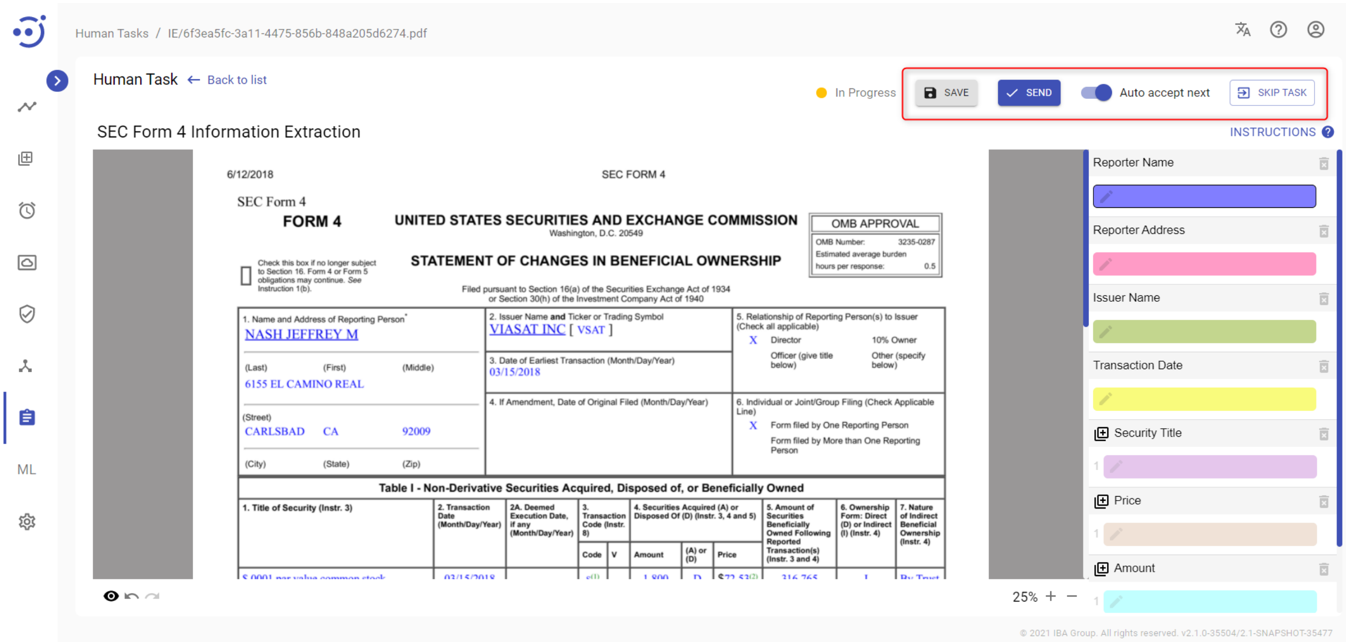
The general procedure of working with the Human Tasks is as follows.

- Select the document to be processed by clicking the **Start working** icon for the corresponding document.
- Click **Accept task** button in the upper right corner. The task status is changed from *Available* to *In Progress.*



On the Human Task screen, the user has several available options:

- Process Human Task depending on the Human Task Type (a, b, c) and submit the answers by clicking the SEND button. The task status is changed from *In Progress* to *Completed.*
  a. Fill in the suggested form for Sample Form Task Type.
  b. Define the correct class for the Sample Classification Task Type.
  c. Tag the document for the Sample Information Extraction Task Type.
- Skip the current task by clicking the SKIP TASK button.
- Save the current changes in the Human Task by clicking the SAVE button.
- Accept the next task automatically by switching the Auto accept next radio button. If the radio button is switched off, the Human Task will be closed after clicking 'Send' or 'Skip task'. If the radio button is on - the user is redirected to the next task in the queue.



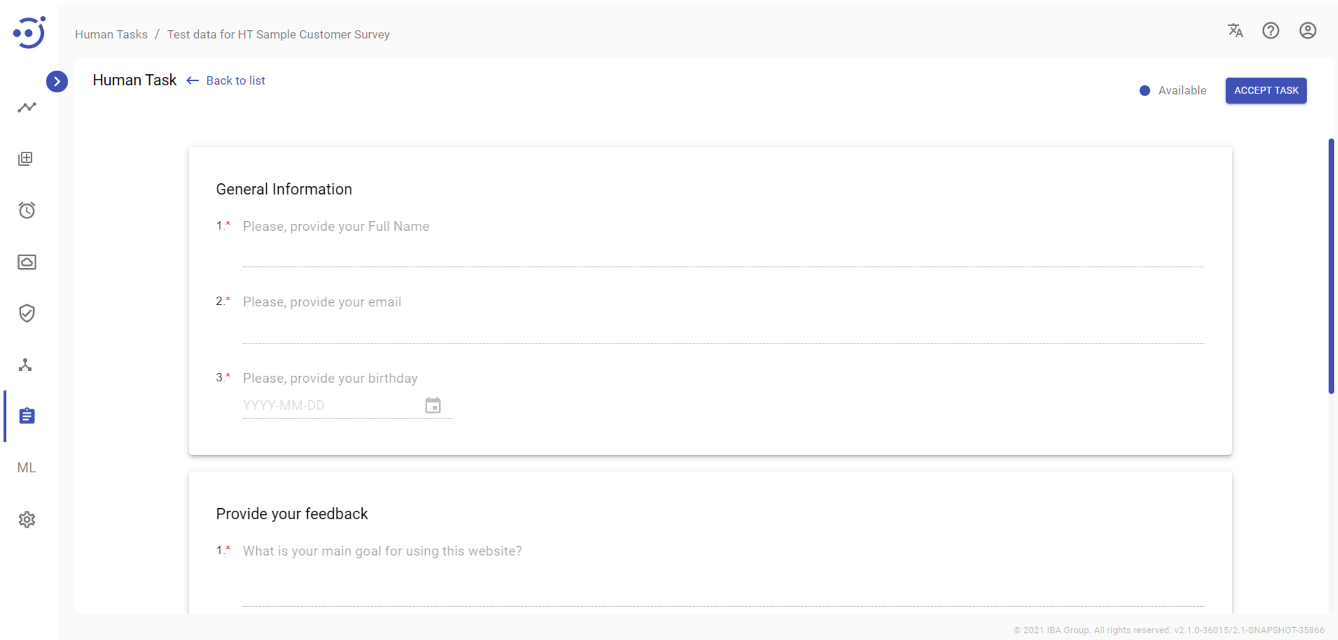
⚠️ The control buttons are generally determined by the Human Task author and can be customized depending on the task. The best practice is to add the elaborated instruction on how to manage the Human Task. The Instructions are available by clicking the INSTRUCTIONS ? button at the top right corner.

To view human task details, you need to be granted HumanTaskType-READ permissions. To accept a human task and start working on it, you need to be granted DocumentType-ACTION permission. See (v. 2.2) Role Permissions.

Sample Form Task

The Form Task allows conducting surveys and assumes that the user fills out a customizable form. The Form Task supports the next set of fields:

- Simple text - single-line input field (type *text*).
- Multiline text - multiline input field (type *textarea*).
- Date picker (type *date*).
- Radio buttons - elements of a single choice (type *radio*).
- Select dropdown lists - a single choice from the list of values, better long list to choose from (type *select*).
- Checkbox for a multiple choice - multiple choices from the list of values (type *checkbox*).



To process the Sample Form Task, the user needs to:

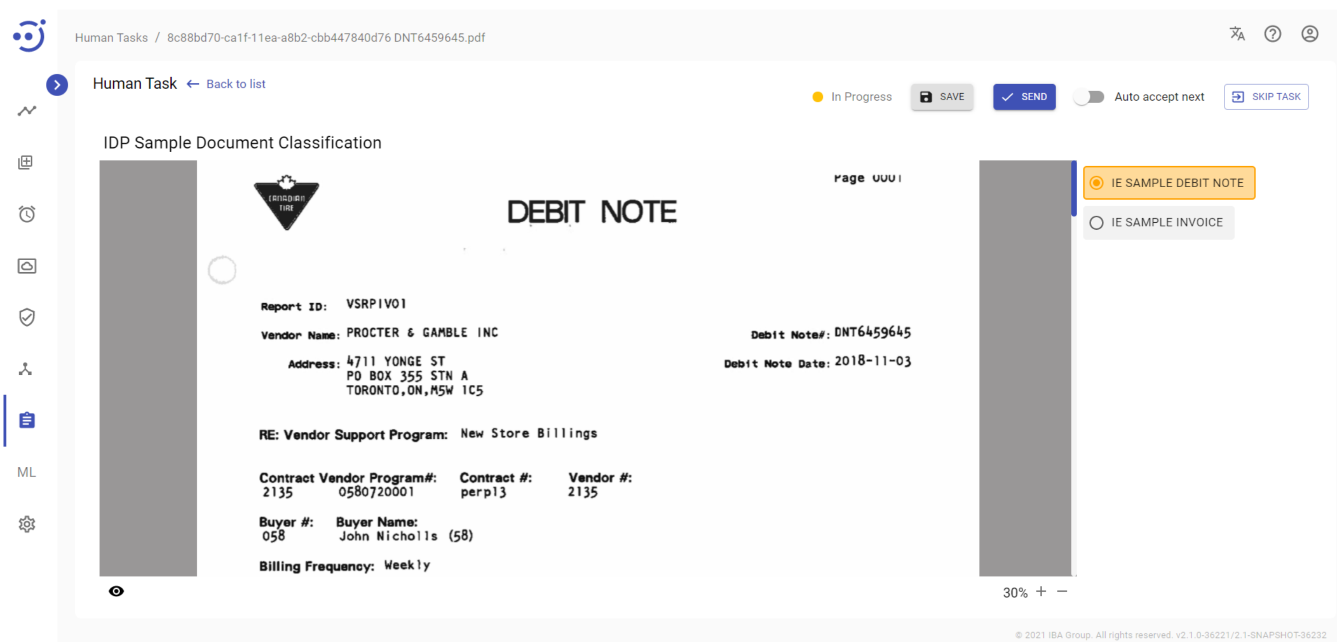
- **Accept** the required task.
- **Fill in** all the required fields/ answer all the required questions.
- **Submit** the answer by clicking the Send button.

Sample Classification Task

The Classification Task allows document classification by assigning them one or more categories (in Machine Learning - classes). The Classification Task can be configured for *Single-Label Classification* (when one document belongs to only one class) or *Multi-Label Classification* (when one document may belong to several classes at a time).

The Classification Task can be utilized for:

- Saving and processing category classified by a human in the automation process.
- Collecting Training Set for Machine Learning model training.
- Verification of data extracted by Machine Learning model.



To process the Sample Form Task, the user needs to:

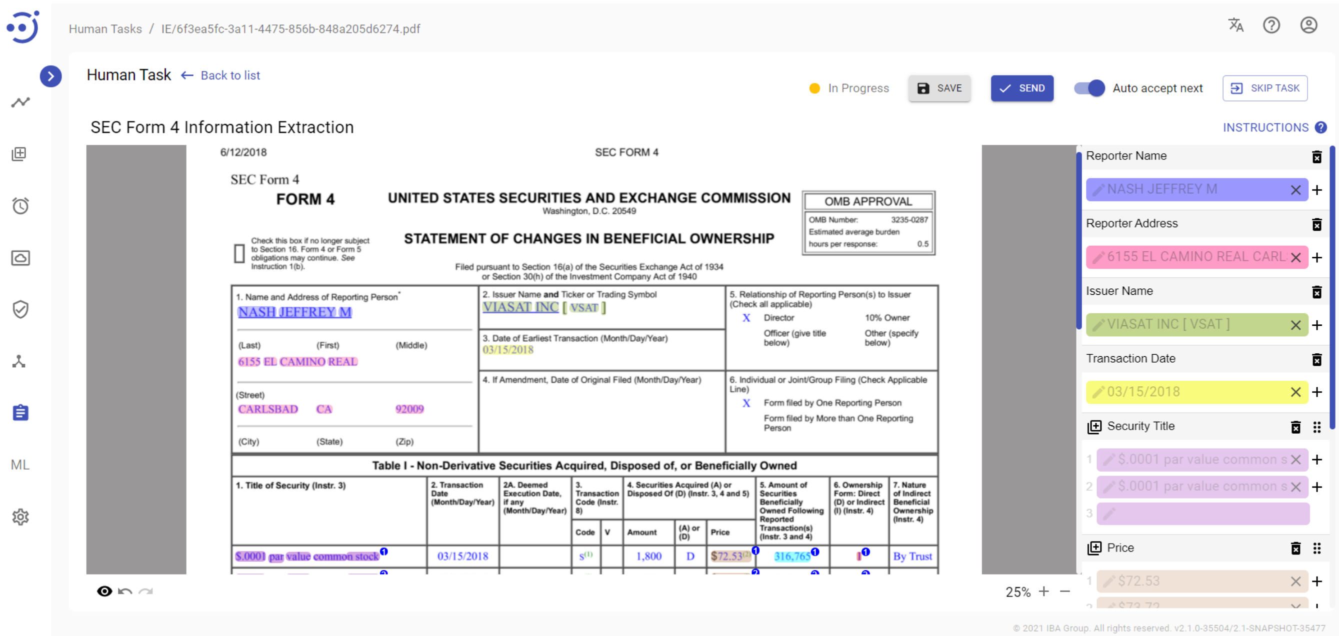
- **Accept** the required task.
- **Classify** the document into one or more categories (*Single-Label* and *Multi-Label Classification,* respectively).
- **Submit** the answer by clicking the Send button.

Sample Information Extraction Task

Information extraction (IE) is a process of extracting structured information (or key facts) from unstructured and/or semi-structured documents (invoices, claims, dividend news, etc.).

The Information Extraction Task can be utilized for:

- Saving and processing data extracted by a human in the automation process.
- Collecting Training Set for Machine Learning model training.
- Verification of data extracted by Machine Learning model.



To process the Sample Form Task, the user needs to:

- **Accept** the required task.
- **Tag** the document carefully.
- **Submit** the answer by clicking the Send button.

(v. 2.2) Tagging Overview

The tagging is a business process allowing users to label the original document to prepare data sets for the **Information Extraction** ML model.

- Tagging Interface
- Tagging Tools
- Start Tagging Process

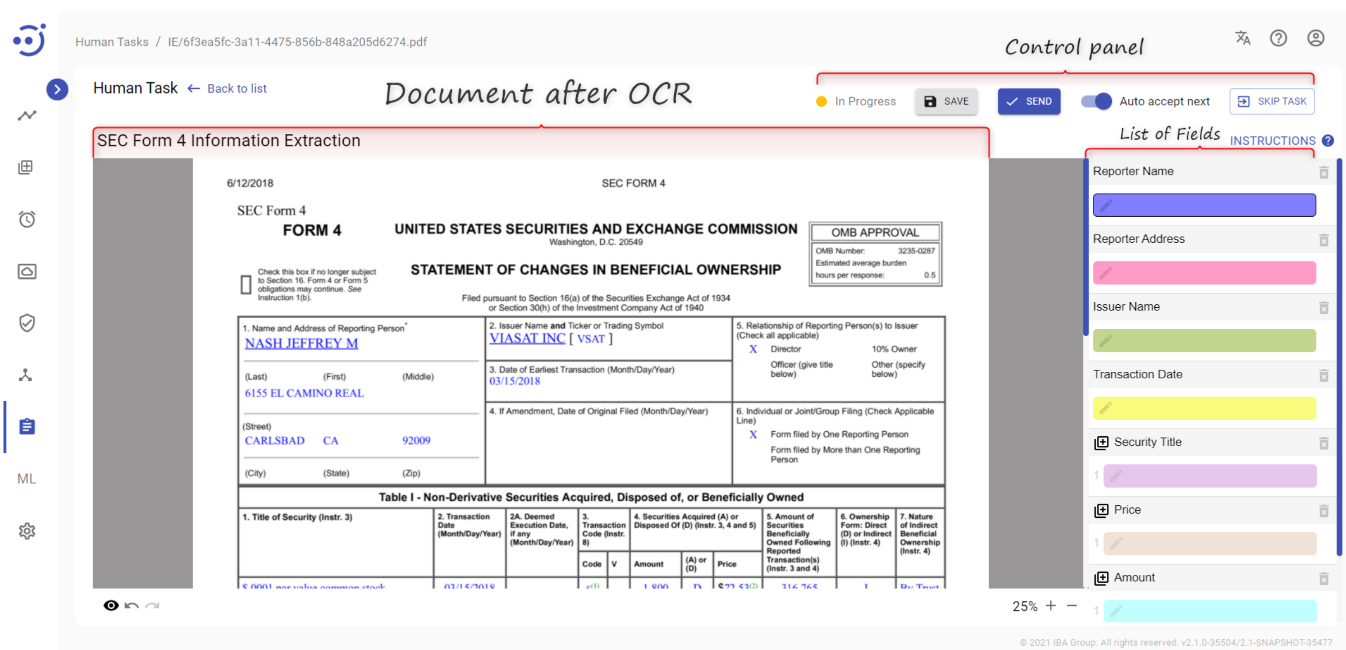
When tagging, it's highly recommended to stick to the following order of steps:

1. Find the **required task** in the Workspace.
2. Select the **Start working** button to open it.
3. Review the **list of fields** on the right panel.
4. Review the **original document**.
5. **Accept the task** to start tagging.
6. Find all the **available fields** in the document and tag them.
7. Review the **tagged document**, making sure there are no fields omitted.
8. Select the **Send** button.

Tagging Interface

The **interface is simple,** but you need to know every part of it to make the tagging process effortless. The Workspace interface has three main areas:

- the window where the **document after OCR** is displayed.
- the panel with the **list of fields** for extraction.
- the **control panel** where the main task control icons are located. See Process Human Task



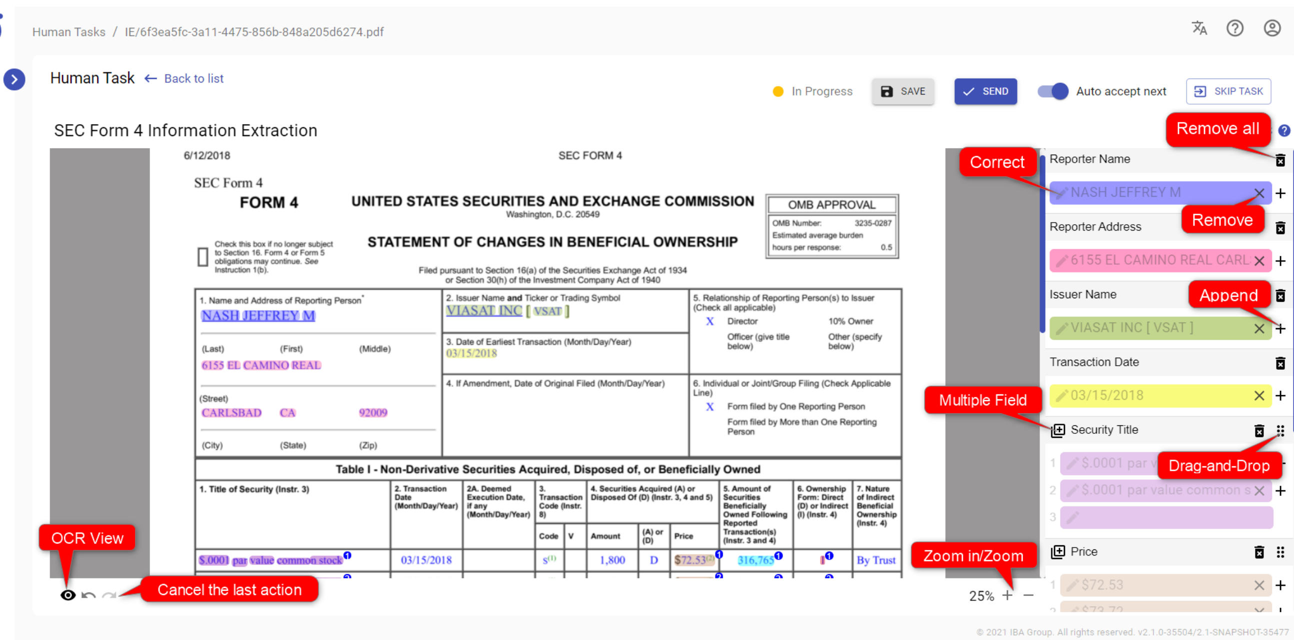
Tagging Tools

To tag the document, you may use the following tagging tools.

Tool	Displayed	Description
Multiple field		Indicator of the field with multiple values.
Correct		Correct the data value.

Append	+	Add a tag to the data-value.
Remove		Remove the data-value/tag.
Remove all		Remove all data-values/all tags of the field.
Drag-and-drop		Use drag-and-drop to change data-values positions.
Cancel the last action		Functions like Ctrl+Z to undo the previous keystroke.
OCR View		Switch to the OCR view.
Zoom in/zoom out	31% + —	Change the viewable scale.

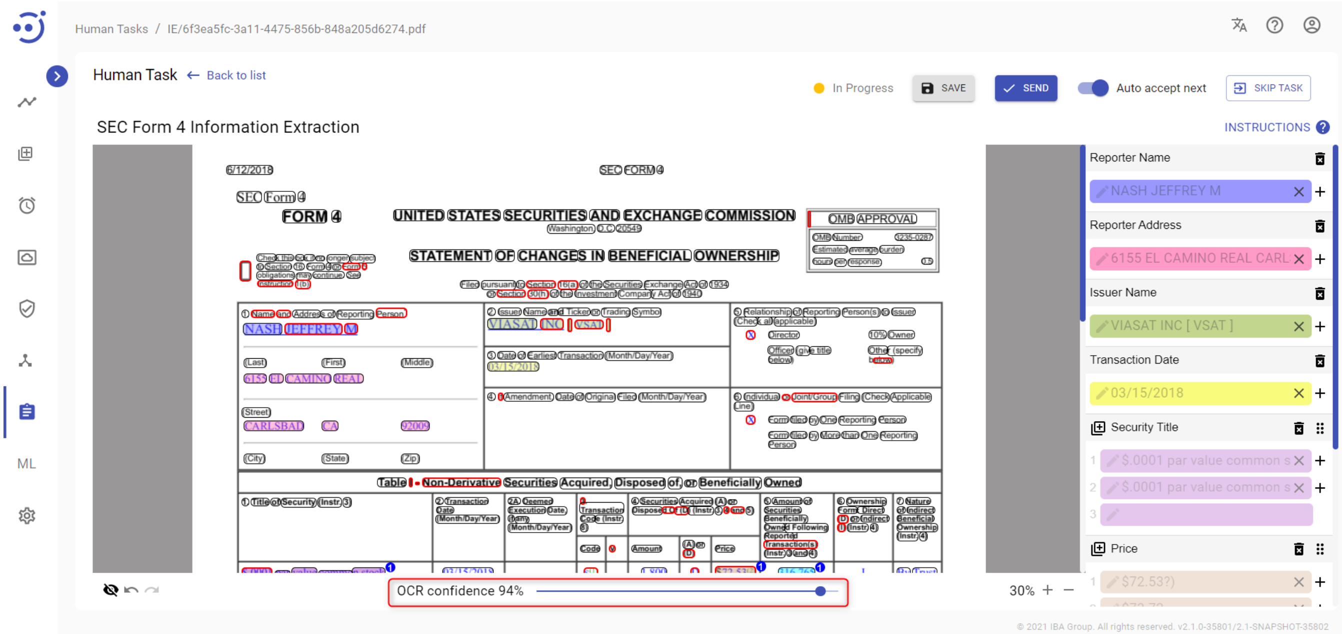
On the following screenshot, you can see how those tagging tools look in the interface.



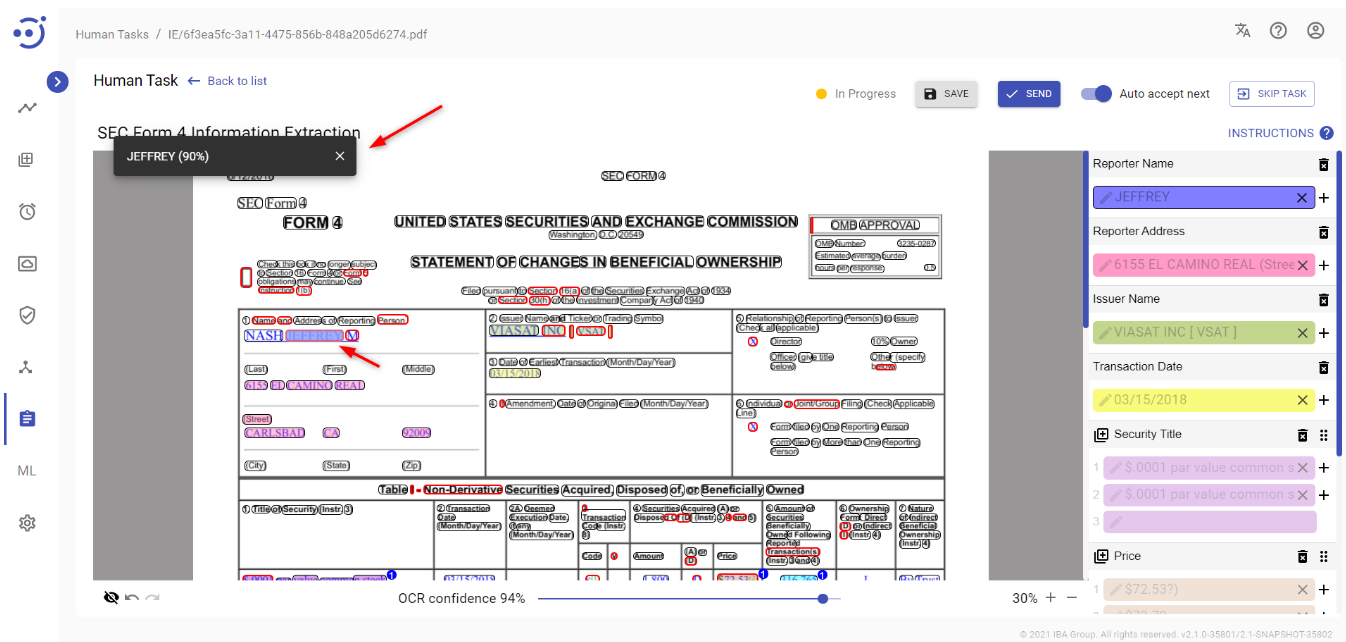
OCR View

The OCR View is available at the Human Task by clicking the icon. The OCR View allows you to see the confidence of recognition of the different document regions. By setting the OCR confidence threshold, it is possible to check what regions are poorly recognized, or not recognized at all.

In the following screenshot, you can see an example of the OCR confidence set for 94%. Regions that recognized with less confidence are highlighted in red.



You can also check the OCR confidence of the particular region by triple-click on it:

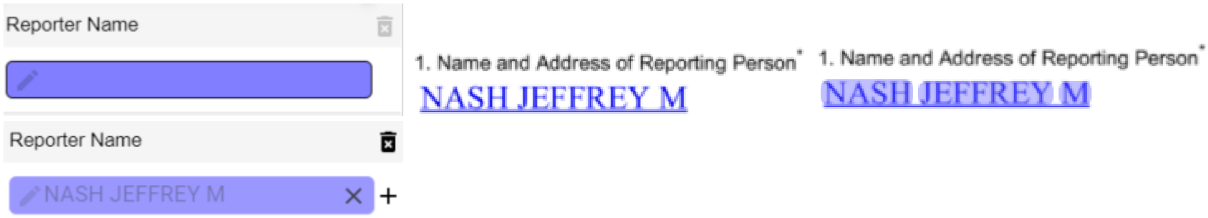


Start Tagging Process

The process of tagging a field is simple. You need to select the necessary field at the right panel and then highlight the required value in the OCRed document.

When you find a text chunk that corresponds to one of the required fields:

1. Click at the required field on the right panel.
2. Drag the mouse over the corresponding chunk of text.
3. Once the field is tagged, the text chunk will be highlighted in that tag's color, and the corresponding value will appear in the field on the right panel.



Combinations to highlight the text:

- **Double click** - select one word.

Note the highlighted text chunk is what the model will see, and the data-value is what the user will receive as an output.

(v. 2.2) Administration

The Administration section ensures the creation and customization of the Human Task Types, assigning user roles and combining them into groups, configuring the Control Server settings, providing license management and audit function of the Easy RPA Control Server.

This section contains the following modules:

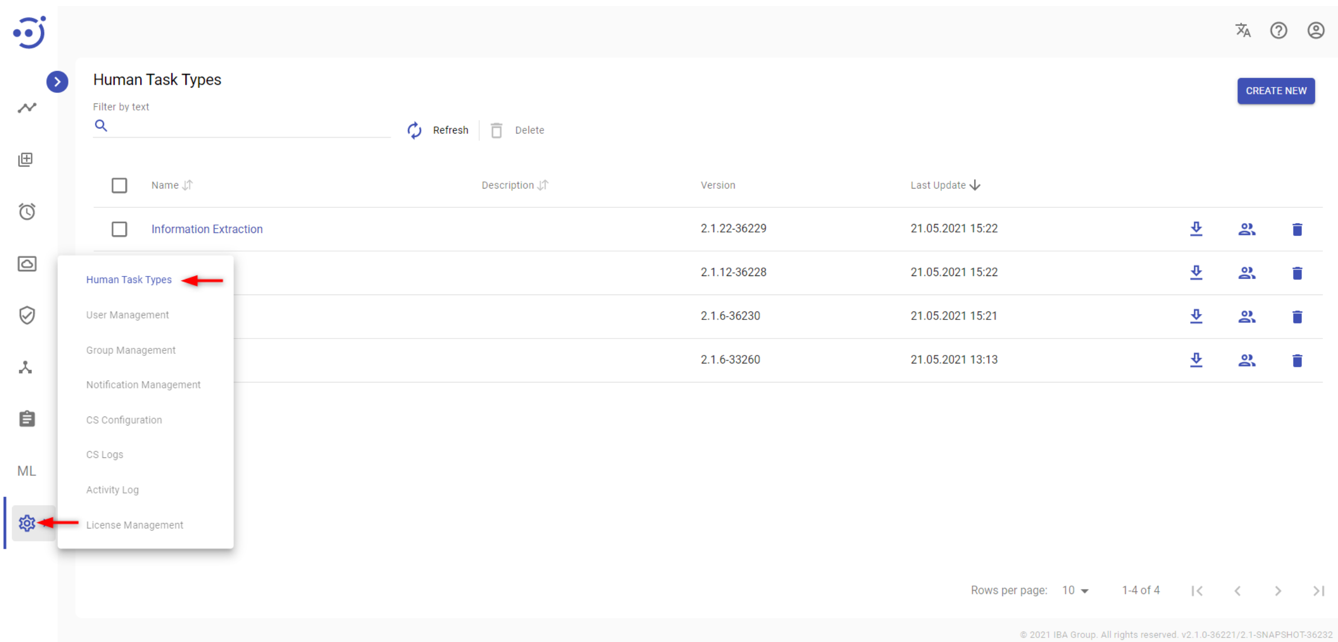
- (v. 2.2) Human Task Types
    - (v. 2.2) Document Types
    - (v. 2.2) Document Type Settings JSON Structure
    - (v. 2.2) Playground
- (v. 2.2) User Management
- (v. 2.2) Group Management
    - (v. 2.2) Role Permissions
    - (v. 2.2) Security Access
- (v. 2.2) Notification Management
- (v. 2.2) Control Server Configuration
- (v. 2.2) Control Server Logs
- (v. 2.2) Activity Log
- (v. 2.2) License Management

(v. 2.2) Human Task Types

- Create a new Human Task Type
- Edit an existing Human Task Type

The Human Task Types module is a standalone application for the Easy RPA Control Server designed as a Human Tasks view editor. The Human Task Type defines the input form of the Human Task in the Workspace. With the help of the Human Task Type, the developer can customize the Human Task on Workspace according to the customer's expectations: to give the user interface a preferable appearance and process input data of different formats.

To navigate to the Human Task Types module and view the list of task types, you need to be granted HumanTaskType-READ permission. See (v. 2.2) Role Permissions.



Columns Description

- **Name** - the Human Task Type name.
- **Description** - a short description of the Human Task Type.
- **Version** - the Human Task Types version.
- **Last Update** - the last date and time when the Human Task Type was changed.

Filter by text

Filtering allows searching for the Human Task Type by the columns Name, Description, Version.

Sorting

Ascending/descending sorting is allowed by the columns: Name, Description, Last Update.

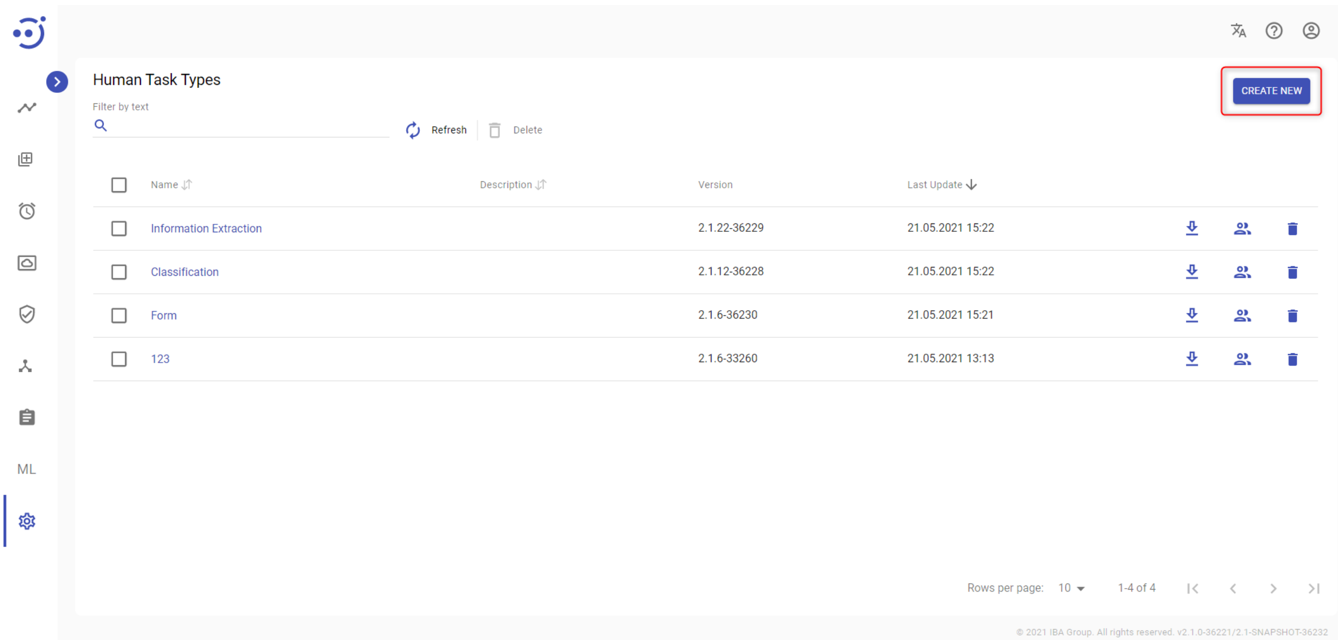
Control Icons

- **Download application** - to download a ZIP archive with all the applicable Human Task Type configurations. Required permission: HumanTaskType-READ. See (v. 2.2) Role Permissions.
- **Delete** - to delete the corresponding Human Task Type. Required permission: HumanTaskType-DELETE. See (v. 2.2) Role Permissions.
- **Refresh** - to pull the latest changes for the Human Task Types.
- **Security Access** - to manage group access for the corresponding Document Type. See (v. 2.2) Security Access.

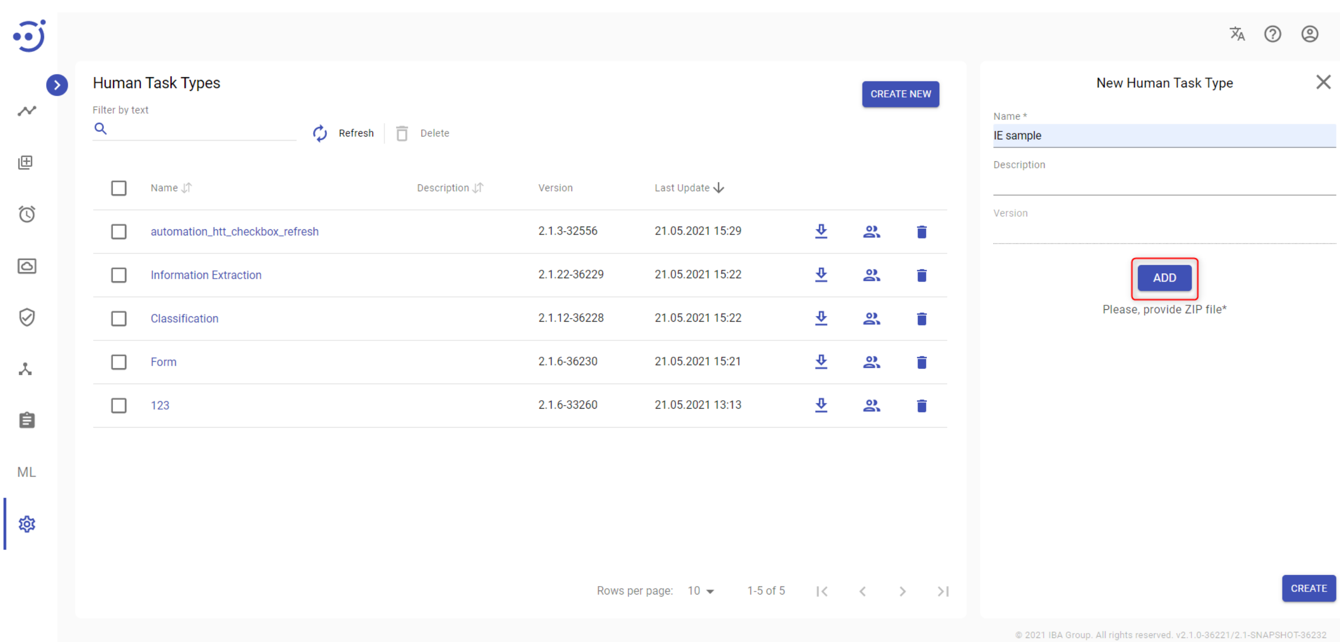
Create a new Human Task Type

To create a new Human Task Type, you need to:

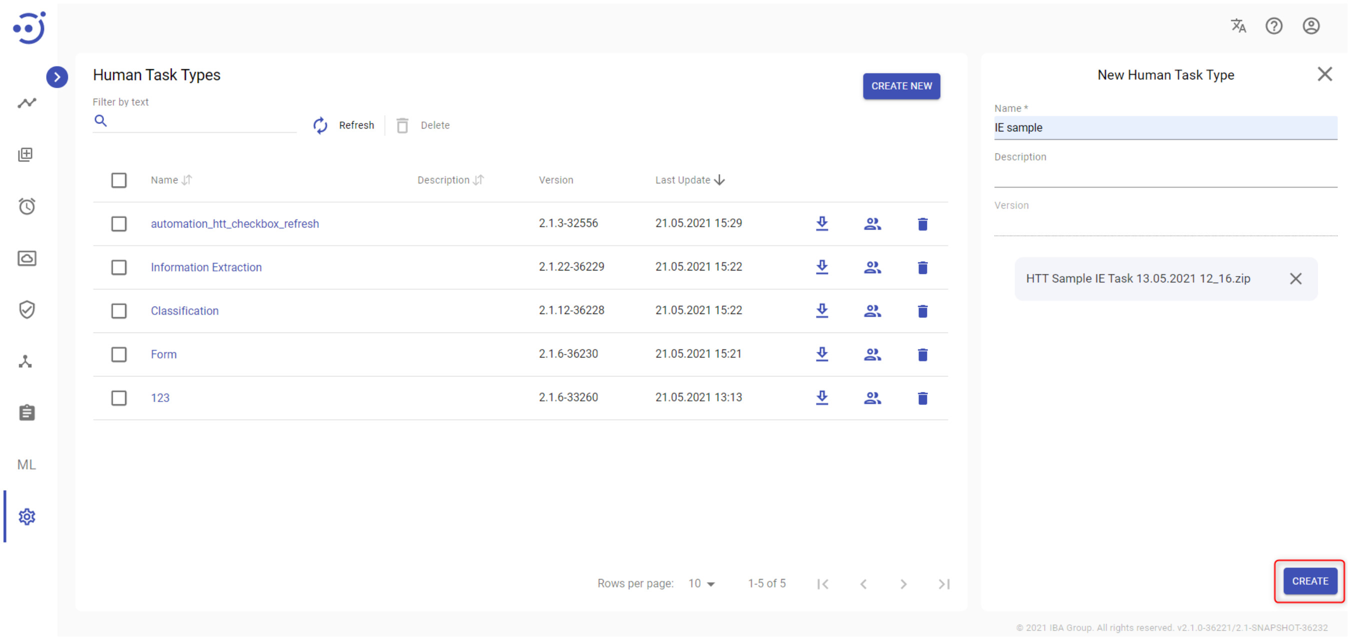
- Navigate to the **Administration Human Task Types** module.
- Click **Create New.**



- Fill in Human Task Type details:
  - a unique **name** to distinguish the Human Task Type (required).
  - a short **description** of the Human Task Type functionalities (optional).



- Click **Add** to upload a ZIP file with the required Human Task Type configuration. Navigate to http://10.224.0.50/htt/ to find the latest build version of the appropriate Human Task Type.

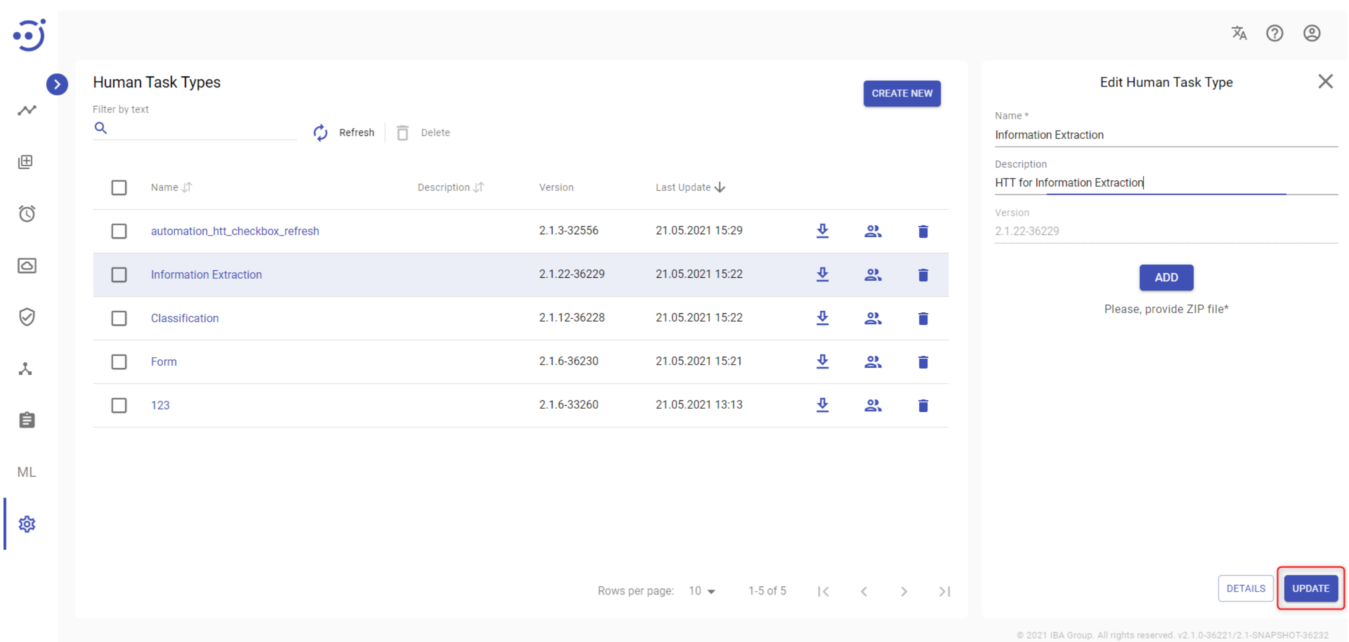


- Click **Create**.

To create a new human task type, you need to be granted HumanTaskType-CREATE permission. See (v. 2.2) Role Permissions.

Edit an existing Human Task Type

Key information about a particular Human Task Type is available at the pop-up panel at the right by clicking on the corresponding row with the Human Task Type. To access the Edit Human Task Type panel, you need to be granted HumanTaskType-UPDATE permissions. See (v. 2.2) Role Permissions.



You can edit the displayed fields (or overwrite the ZIP file by clicking **Add** button) and save the result by clicking the **Update** button. Required Permission: HumanTaskType-UPDATE. See (v. 2.2) Role Permissions.

The pop-up panel contains the following information:

- **Name** - the Human Task Type name.
- **Description** - a short description of the Human Task Type.
- **Version** - the Human Task Types version, which will be updated if a new ZIP file is uploaded.

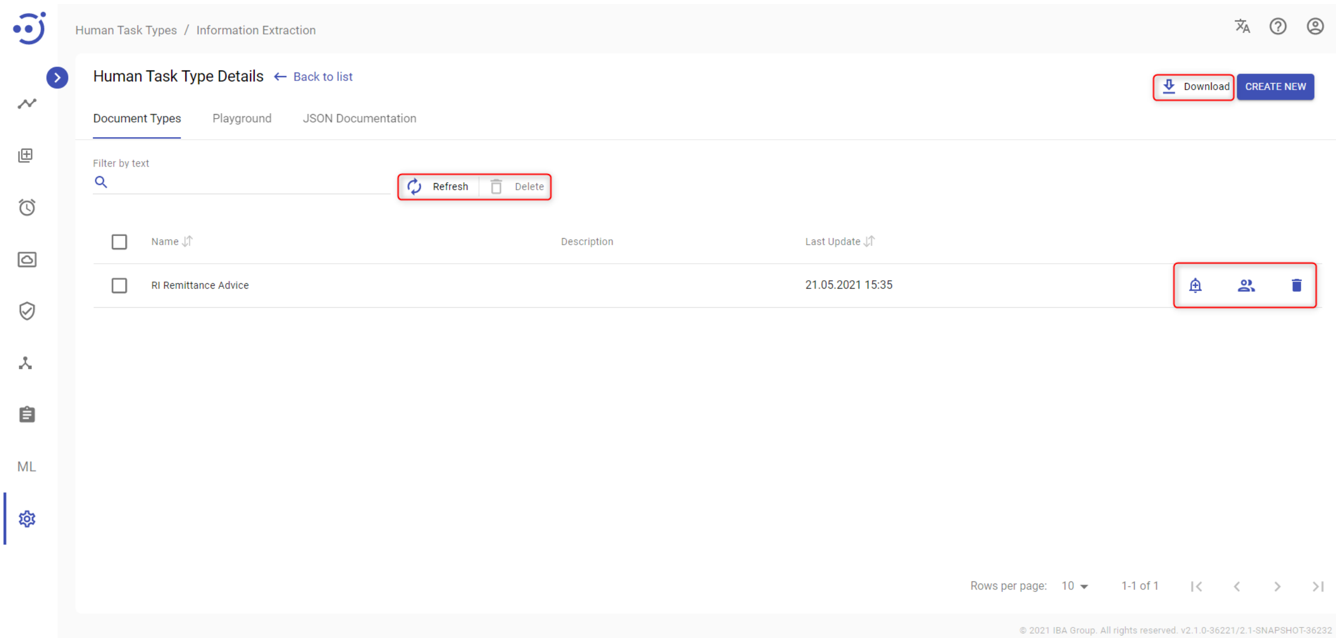
For more information about the Human Task Type - click **Details**. Required Permission: HumanTaskType-READ. See (v. 2.2) Role Permissions.

(v. 2.2) Document Types

- Create a new Document Type
- Edit an existing Document Type
- Security access to Document Type
- Manage Notifications

The Document Type defines the output form of the Human Task in the Workspace: the fields that should be retrieved from the document, and additional settings that are used by the Human Task to display the input document.

To access Document Types tab and view a list of document types, you need to be granted DocumentType-READ permissions. See (v. 2.2) Role Permissions.



Columns Description

- **Name** - the Document Type name.
- **Description** - a short description of the Document Type.
- **Last Update** - the last date and time when the Document Type was changed.

Filter by text

Filtering allows searching for the Document Type by the columns: Name, Description.

Sorting

Ascending/descending sorting is allowed by the columns: Name, Last Update.

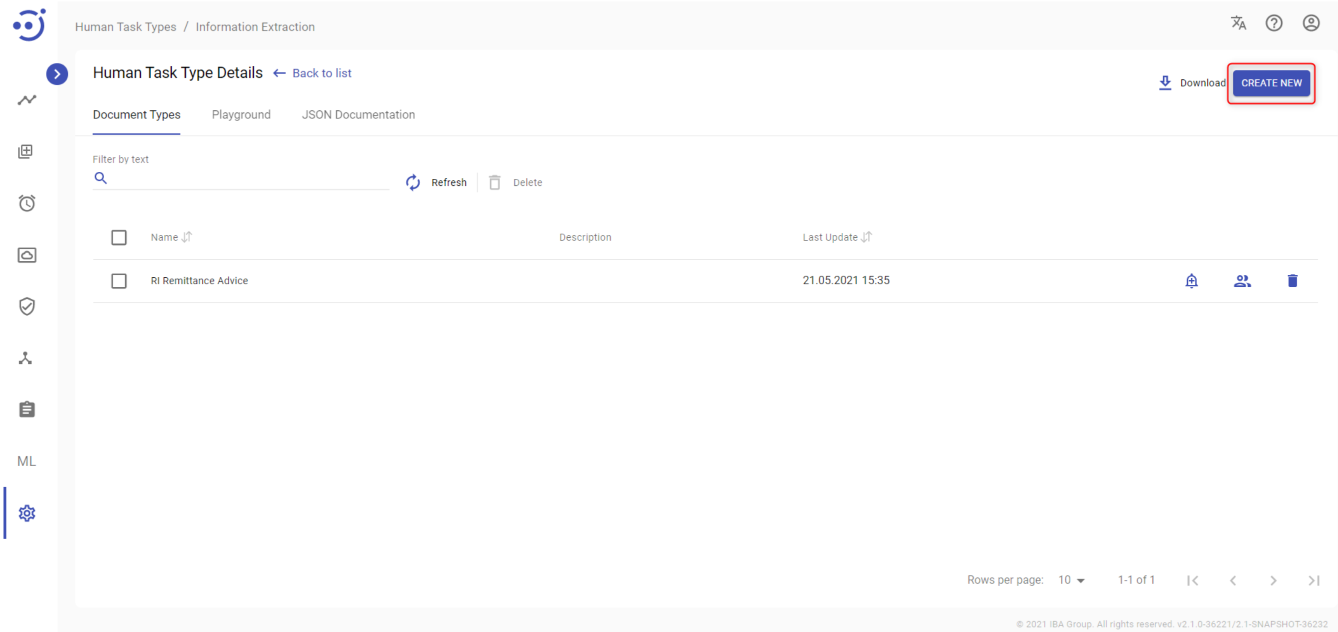
Control Icons

- **Manage Notifications** - See (v. 2.2) Notification Management.
- **Security Access** - to manage group access for the corresponding Document Type. See (v. 2.2) Security Access.
- **Delete** - to delete the corresponding Document Type. Required Permission: DocumentType-DELETE. See (v. 2.2) Role Permissions.
- **Download application** - to download a ZIP archive with all the applicable configurations of the current Human Task Type.
- **Refresh** - to pull the latest changes for the Document Types.

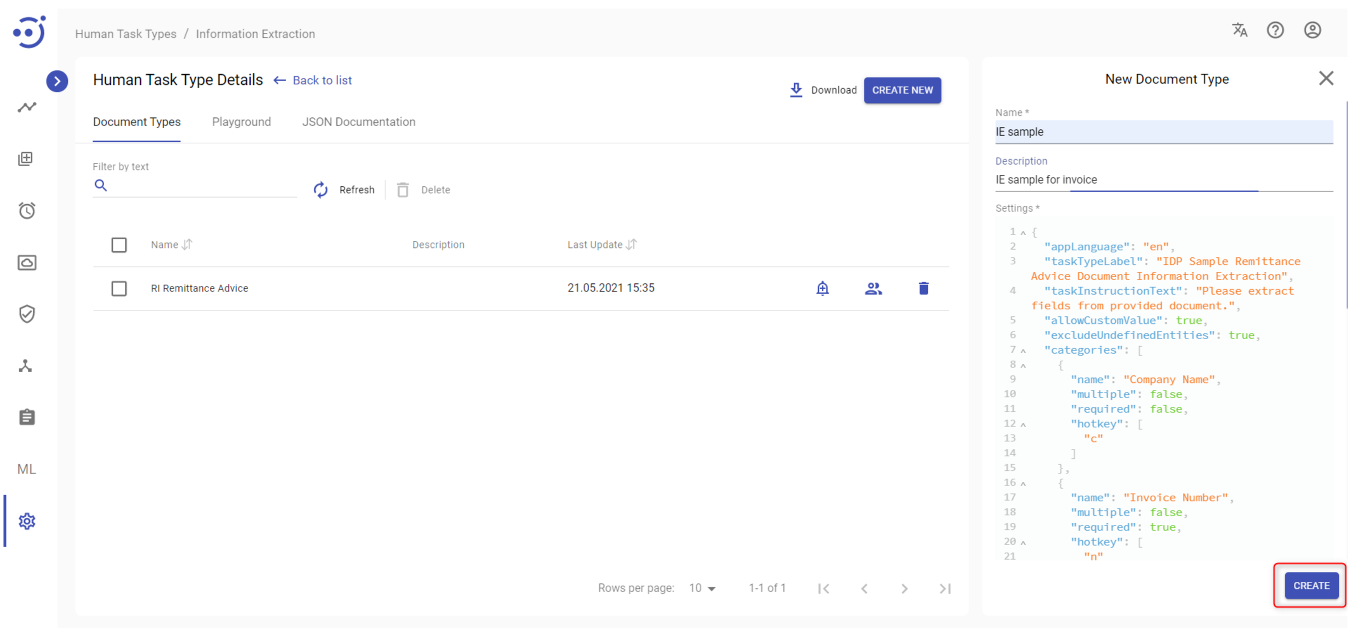
Create a new Document Type

To create a new Document Type, you need to:

- Navigate to the **Administration Human Task Types** module.
- Navigate to the **Human Task Type Details** of the corresponding Human Task Type.
- Click **Create New**.



- Fill in Document Type details:
  - a unique **name** to distinguish the Document Type (required).
  - a short **description** of the Document Type functionalities (optional).
- Add Settings JSON (required). For more details see (v. 2.2) Document Type Settings JSON Structure.

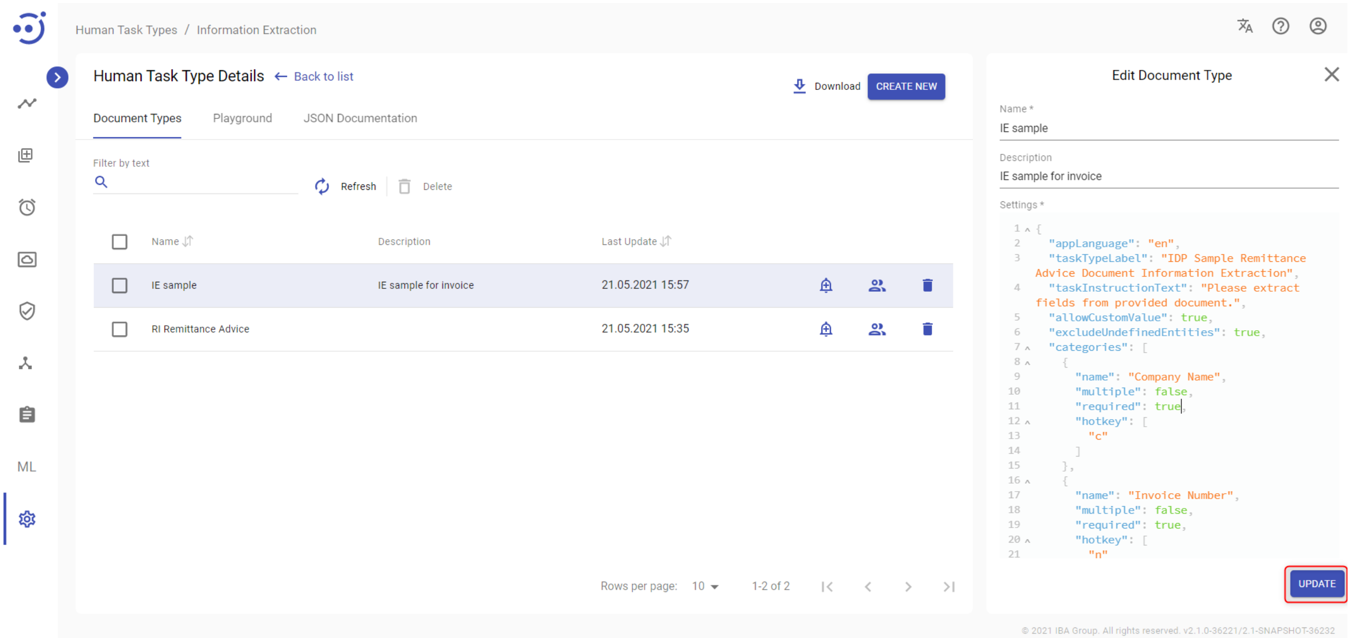


- Click **Create**.

To create a new document type, you need to be granted DocumentType-CREATE permission. See (v. 2.2) Role Permissions.

Edit an existing Document Type

Key information about a particular Document Type is available at the pop-up panel at the right by clicking on the corresponding row with the Document Type. To access the Edit Document Type panel, you need to be granted DocumentType-UPDATE permission. See (v. 2.2) Role Permissions.



You can edit the displayed fields and Settings JSON, and save the result by clicking the **Update** button. Required Permission: Document Type-UPDATE.

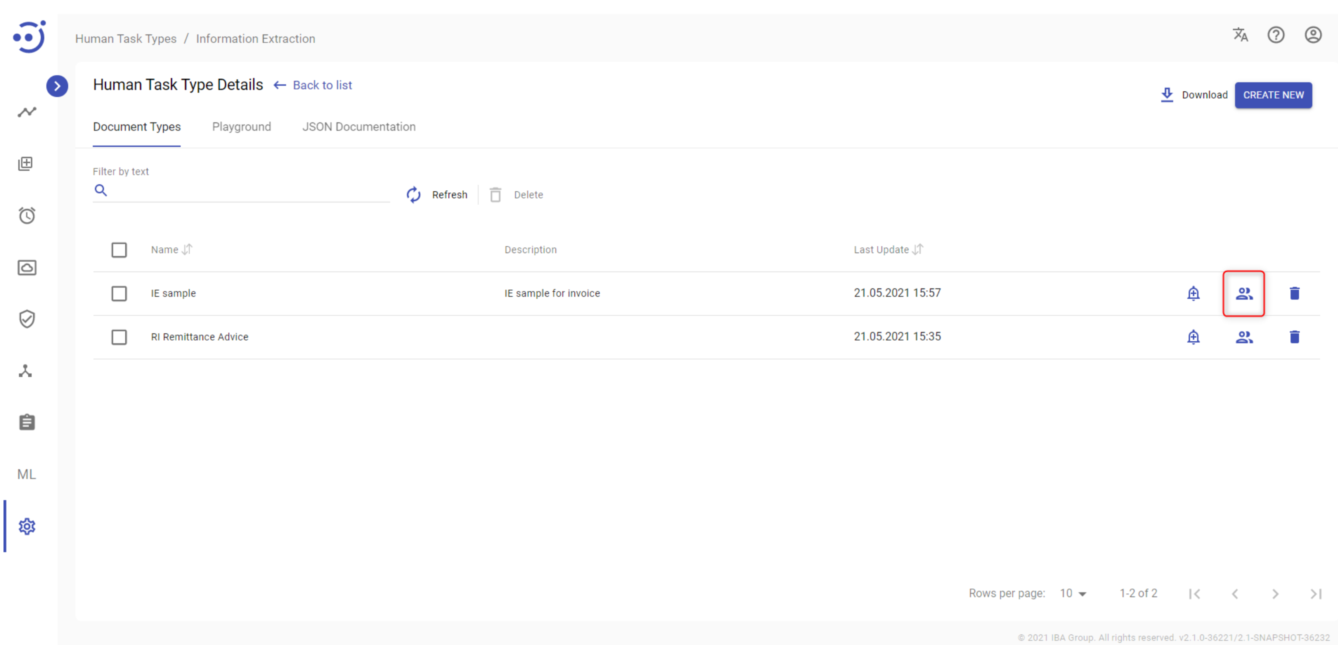
The pop-up panel contains the following information:

- **Name** - the Human Document Type name.
- **Description** - a short description of the Document Type.
- **Settings** - information about the fields that should be retrieved from the documents + additional settings. See (v. 2.2) Document Type Settings JSON Structure.

Security access to Document Type

To manage the security access for the Document Type, you need to:

- Navigate to the **Administration** **Human Task Types** module.
- Navigate to the **Human Task Type Details** of the corresponding Human Task Type.
- Click at the Security Access icon for the corresponding Document Type.



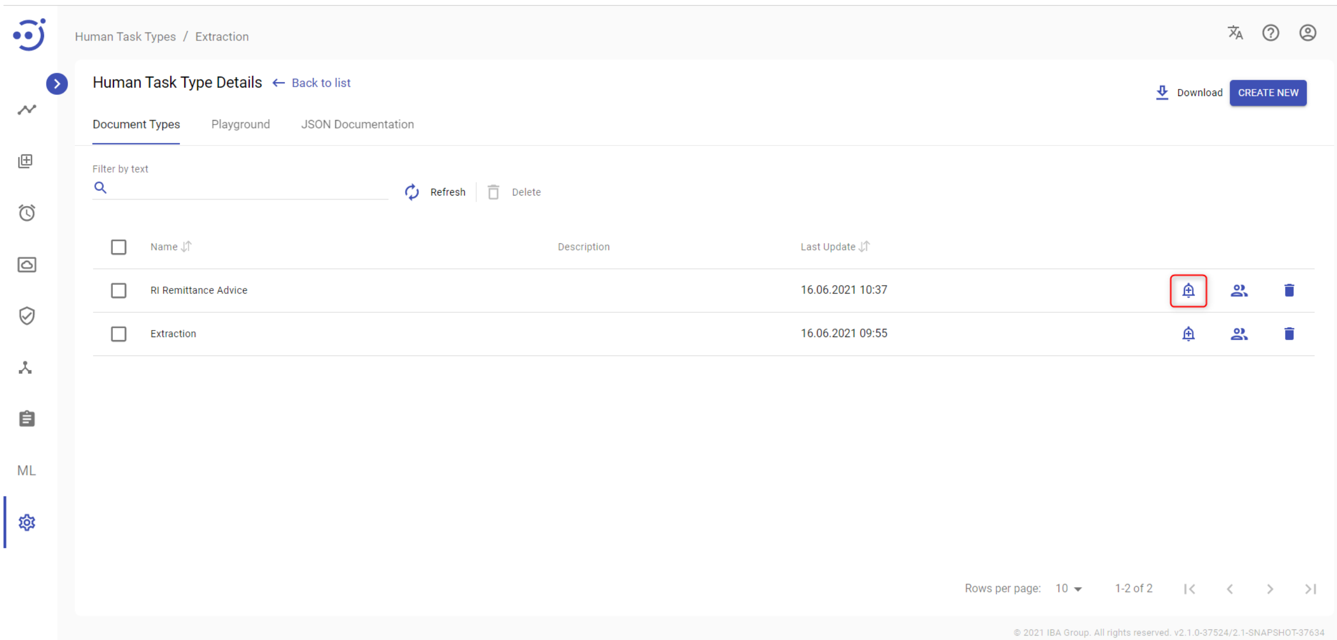
- For further actions see (v. 2.2) Security Access.

Manage Notifications

The Manage Notifications button allows users to receive messages about a particular Document Type. To access the Notifications, you need to be granted DocumentType-READ permission. See (v. 2.2) Role Permissions.

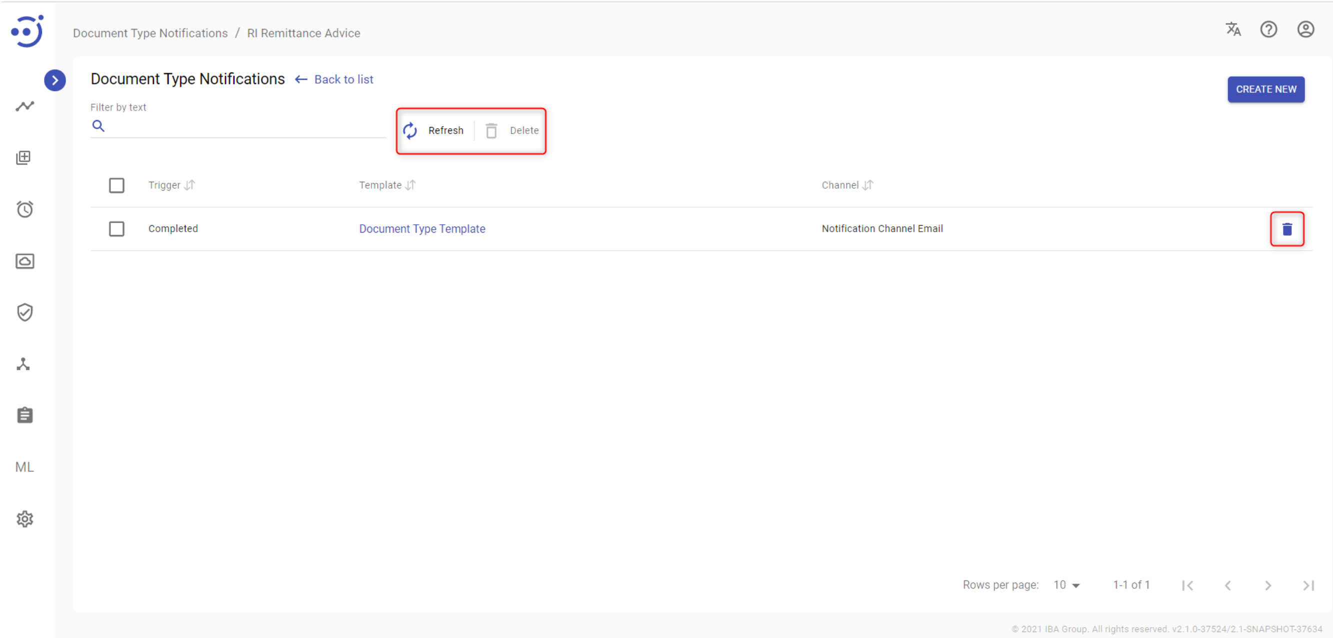
To manage the notifications for the Document Type, you need to:

- Navigate to the **Administration Human Task Types** module.
- Navigate to the **Human Task Type Details** of the corresponding Human Task Type.
- Click at the Manage Notifications icon for the corresponding Document Type.



Control icons

- **Refresh** - to refresh the page.
- **Delete** an existing channel via the recycle bin control icon in the table row or Delete icon above the table. Required Permission: DocumentType-UPDATE. See (v. 2.2) Role Permissions.



Columns Description

- **Trigger** - the action for which the message is sent to the particular channel.
- **Template** - example of a message is sent to a channel.
- **Channel** - mailing list of contacts.

Filter by text

Filtering allows you to search the automation process by Trigger, Template and Channel.

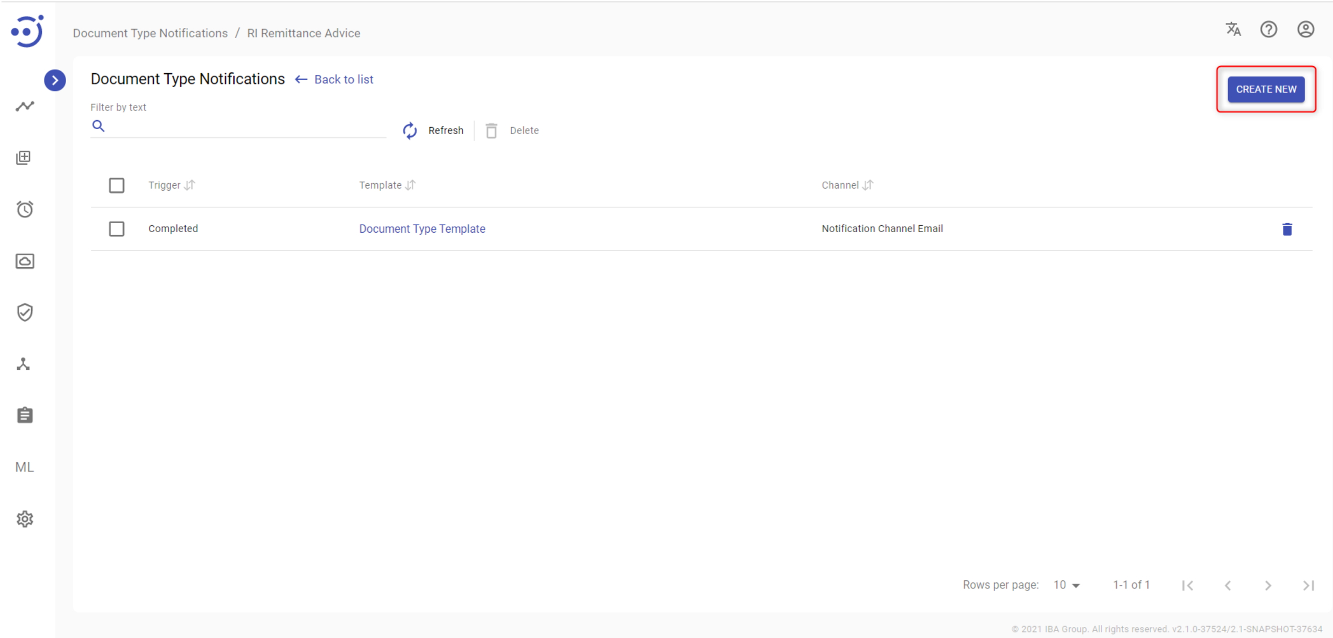
Sorting

Ascending/descending sorting is allowed for the Trigger, Template and Channel columns.

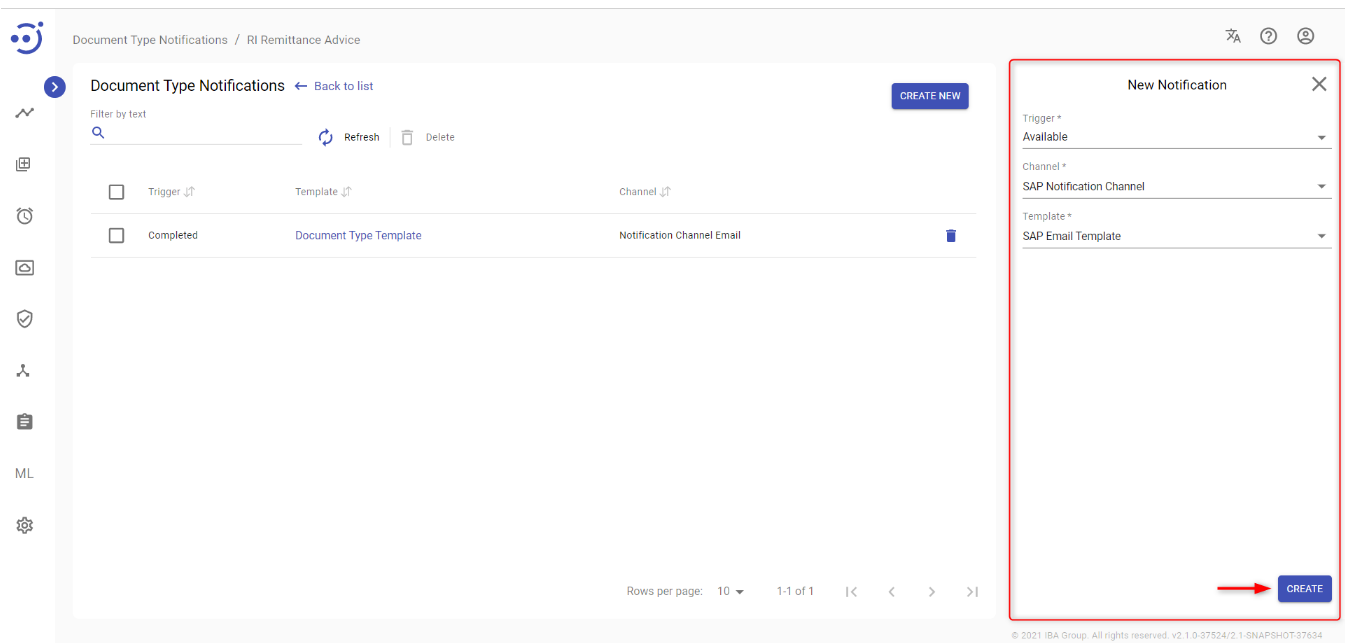
Create a New Notification

To create a New Notification, you need to be granted DocumentType-UPDATE. See (v. 2.2) Role Permissions.

1. Go to the Document Type Notifications and click **CREATE NEW** button:



2. In the New Notification pop-up panel enter **Trigger, Chanel, Template.**
3. Click **CREATE.**

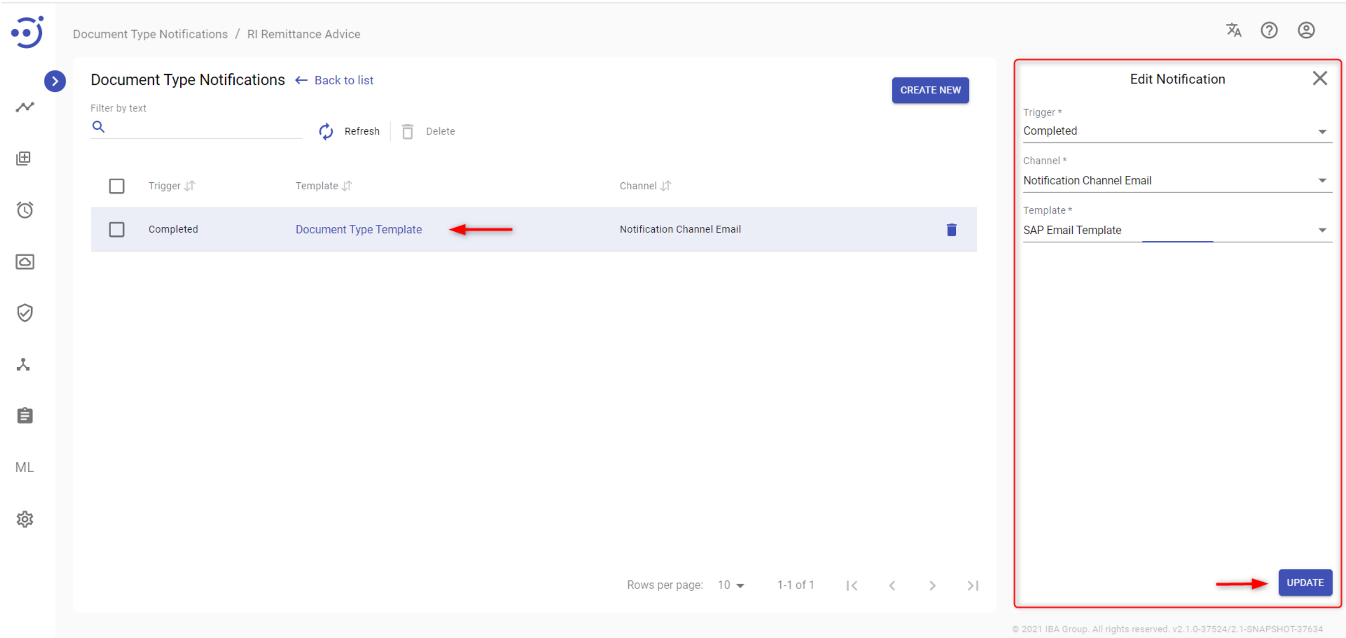


View/Edit an existing notification

To update an existing Notification, you need to:

- Click on the corresponding Record.
- Change one of the field values in the **Edit Notification** popup panel.
- Click **UPDATE**.

Required Permission: DocumentType-UPDATE. See (v. 2.2) Role Permissions.


Document Type Notifications / RI Remittance Advice
Document Type Notifications
Back to list
CREATE NEW
Filter by text
Refresh
Delete
Trigger
Template
Channel
Completed
Document Type Template
Notification Channel Email
ML
Rows per page: 10
1-1 of 1
Edit Notification
Trigger *
Completed
Channel *
Notification Channel Email
Template *
SAP Email Template
UPDATE

(v. 2.2) Document Type Settings JSON Structure

This section describes how to create Settings JSON for the following Human Task Types:

- Form Task
- Classification Task
- Information Extraction Task

Form Task

Below you can find an example of the Settings JSON for the Sample From Task:

Form Settings JSON example

```
{
    "autoSave": false,
    "taskInstructionText": "Carefully read and classify this text using the categories provided.",
    "taskInstructionLink": "https://172.20.194.57:8444/minio/data/ht_articles_classification/instruction.html",
    "taskTypeLabel": "Forms",
    "appLanguage": "en",
        "groups": [
                {
                        "groupTitle": "General Information",
                        "fields": [
                                {
                                        "name": "full_name",
                                        "label": "Please, provide your Full Name",
                                        "type": "text",
                                        "required": true,
                                        "validationRegExp": "/^[a-zA-Z]+$/"
                                },
                                {
                                        "name": "email",
                                        "label": "Please, provide your email",
                                        "type": "text",
                                        "required": true,
                                        "validationRegExp": "^[\\w-\\.]+@([\\w-]+\\.)+[\\w-]{2,4}$"
                                },
                                {
                                        "name": "birthday",
                                        "label": "Please, provide your birthday",
                                        "type": "date",
                                        "required": true
                                }, {
                                        "name": "Gender",
                                        "label": "Please, provide your gender",
                                        "type": "radio",
                                        "required": false,
                                        "items": [
                                                { "label": "Male", "disabled": false },
                                                { "label": "Female", "disabled": false },
                                                { "label": "Other", "disabled": true }
                                        ]
                                }
                        ]
                },
                {
                        "groupTitle": "Provide your feedback",
                        "fields": [
                                {
                                        "name": "goal_of_using",
                                        "label": "What is your main goal for using this website?",
                                        "type": "textarea",
                                        "required": true
                                },
                                {
```

```
                                        "name": "what_changed",
                                        "label": "What changed for you after you started using our website?",
                                        "type": "textarea",
                                        "required": true,
                                        "validationRegExp": "/^[a-zA-Z]{20,50}$/"
                                },
                                {
                                        "name": "where_did_you_hear",
                                        "label": "Where did you first hear about us?",
                                        "type": "radio",
                                        "required": true,
                                        "items": [
                                                {
                                                        "label": "On Google",
                                                        "disabled": false
                                                },
                                                {
                                                        "label": "On Billboards",
                                                        "disabled": false
                                                },
                                                {
                                                        "label": "On TV Ads",
                                                        "disabled": false
                                                }
                                        ]
                                },
                                {
                                        "name": "what_you_like",
                                        "label": "What do you like most about our website?",
                                        "type": "select",
                                        "required": true,
                                        "values": ["Design", "Experience", "Action Flow", "Ease of finding
required information"]
                                },
                                {
                                        "name": "what_you_interested",
                                        "label": "what are you interested in?",
                                        "type": "checkbox",
                                        "required": true,
                                        "disabled": false,
                                        "items": [
                                                { "label": "Politic", "disabled": false},
                                                { "label": "Sport", "disabled": false},
                                                { "label": "History", "disabled": true }
                                        ]
                                }
                        ]
                }
        ]
}
```

These settings contain:

- **autoSave** (boolean) (optional) - allows saving intermediate task results automatically. By default, the setting has a "*false*" value.
- **taskInstructionText** (string) (optional) - represents the instructions text that will appear in the popup
- **taskInstructionLink** (string) (optional) - represents the link to the remote instructions source. Having at least one of these fields **taskInstructionText** or **taskInstructionLink** will cause the Instructions button to appear.
- **taskTypeLabel** (string) (optional) - allows to configure the task title. By default, it is set to "Forms".
- **appLanguage** (string) (optional) - allows the user to set up the Human Task localization. Currently available options are "*en*" and "*ru*". By default, the task displays as "*en*".
- **groups** (list of objects) (required) - list of group settings. Each group in the list has the following structure:
    - **groupTitle** (string) (required) - identifies the group name to display in Human Task.
    - **fields** (list of objects) (required) - list of fields settings. Each field in the list has the following structure:
        - **name** (string) (required) - is used as a key to get value from output result. It's never displayed on the Human Task and **must be unique for the entire form**
        - **label** (string) (required) - label to display on Human Task.
        - **type** (string) (required) - specifies the type of field. Should be one of the supported types: **text**, **textarea**, **date**, **radio**, **select**, **checkbox**.

- **required** (boolean) (optional) - shows if the field is required for filling, so the user won't be able to submit Human Task without specifying the values for all required fields.
- **validationRegExp** (string) (optional) - provides possibility to validate filled values using regular expressions.
- **disabled** (boolean) (optional) - provides the possibility to disable the field which will prevent the user from filling this field.
- **values** (list of strings) (required only for "type": "select") - is used only if **"type": "select"**. Specifies possible items in the select dropdown list.
- **items** (list of objects) (required only for "type": "checkbox") - is used only if **"type": "checkbox"**. Specifies possible items to check. Each item in the list has the following properties:
    - **label** (string) (required) - the label of the checkbox to display on Human Task.
    - **disabled** (boolean) (optional) - provides the possibility to disable the checkbox item which will prevent the user from select it.

Classification Task

Below you can find an example of the Settings JSON for the Sample Classification Task:

Classification Settings JSON example

```
{
    "autoSave": false,
    "taskInstructionText": "Carefully read and classify this text using the categories provided.",
    "taskInstructionLink": "https://172.20.194.57:8444/minio/data/ht_articles_classification/instruction.html",
    "taskTypeLabel": "Document Classification",
    "appLanguage": "en",
        "multipleChoice": false,
        "categories": [
                "Science",
                "Politics",
                "Sport",
                "Business"
        ],
        "scoreThreshold": 0.1
}
```

These settings contain:

- **autoSave** (boolean) (optional) - allows saving intermediate task results automatically. By default, the setting has a "*false*" value.
- **taskInstructionText** (string) (optional) - represents the instructions text that will appear in the popup
- **taskInstructionLink** (string) (optional) - represents the link to the remote instructions source. Having at least one of these fields **taskInstructionText** or **taskInstructionLink** will cause the Instructions button to appear.
- **taskTypeLabel** (string) (optional) - allows to configure the task title. By default, it is set to "Document Classification".
- **appLanguage** (string) (optional) - allows the user to set up the Human Task localization. Currently available options are "*en*" and "*ru*". By default, the task displays as "*en*".
- **multipleChoice** (boolean) (optional) - allows enabling multiple choice mode, where you can select multiple categories instead of one. By default, the setting has a "*false*" value.
- **categories** (list of strings) (required) - list of predefined classes your documents may relate to
- **scoreThreshold** (decimal) (optional) - is used when **multipleChoice is true** to auto-select the categories after ML. When **multiple Choice is false**, the **scoreThreshold** doesn't matter because the category with the highest score is automatically selected.

Information Extraction Task

Below you can find an example of the Settings JSON for the Sample Information Extraction Task:

Information Extraction Settings JSON example

```
{
         "regexFunctions": {
                "numberMore10": "(value) => { return Number(value) > 10}",
                "lengthMore3": "(value) => { return value.length > 3}"
        },
    "taskInstructionText": "Carefully read and classify this text using the categories provided.",
```

```
    "taskInstructionLink": "https://172.20.194.57:8444/minio/data/ht_articles_classification/instruction.html",
    "taskTypeLabel": "Information Extraction",
    "autoSave": false,
    "allowCustomValue": false,
    "appLanguage": "en",
    "excludeUndefinedEntities": false,
        "categories": [
                {
                        "name": "Amount",
                        "multiple": true,
                        "regex": "^[0-9]*$"
                },
                {
                        "name": "Description",
                        "multiple": true
                },
                {
                        "name": "ItemQuantity",
                        "multiple": true,
                        "required": true
                },
                {
                        "name": "ItemPrice",
                        "multiple": true,
                        "required": true,
                        "helperText": "Number should be more than 10",
                        "regexFnc": ["numberMore10","lengthMore3"]
                },
                {
                        "name": "ItemAmount",
                        "multiple": true
                }
        ]
}
```

These settings contain:

- **regexFunctions** (object) (optional) - a special object which contains "key" "value" pairs to specify custom fields validators, where "key" is your custom function name which can be used as a link in "**regexFnc**" option of field settings under "**categories**" setting. "value" - is your custom JavaScript lambda function.
- **taskInstructionText** (string) (optional) - represents the instructions text that will appear in the popup
- **taskInstructionLink** (string) (optional) - represents the link to the remote instructions source. Having at least one of these fields **taskInstructionText** or **taskInstructionLink** will cause the Instructions button to appear.
- **taskTypeLabel** (string) (optional) - allows to configure the task title. By default, it is set to "Information Extraction".
- **autoSave** (boolean) (optional) - allows saving intermediate task results automatically. By default, the setting has "*false*" value.
- **allowCustomValue** (boolean) (optional) - enables the possibility to enter a custom value without any connection to the input document picture. This possibility is useful when OCR failed to extract some text from the document.
- **appLanguage** (string) (optional) - allows the user to set up the Human Task localization. Currently available options are "*en*" and "*ru*". By default, the task displays as "*en*".
- **excludeUndefinedEntities** (boolean) (optional) - allows getting the output only of fields that are configured in "categories" setting. By default, the setting has "*false*" value.
- **categories** (list of objects) (required) - list of fields to extract from the document, where each item contains:
    - **name** (string) (required) - it serves as a key to receiving data from Human Task output
    - **multiple** (boolean) (required) - shows if this field may have multiple values (uses when you have the list with details of some items in your document, e.g. a list of products)
    - **required** (boolean) (optional) - shows if the field is required for extraction, so human won't be able to submit Human Task without specifying the values for all required fields
    - **helperText** (string) (optional) - an additional text which is shown if the value is invalid due to additional validators specified by regexp settings.
    - **regex** (string) (optional) - specify regexp function to use for values validation
    - **regexFnc** (list of string) (optional) - list of names of validator functions, which are specified by in "**regexFunctions**".

(v. 2.2) Playground

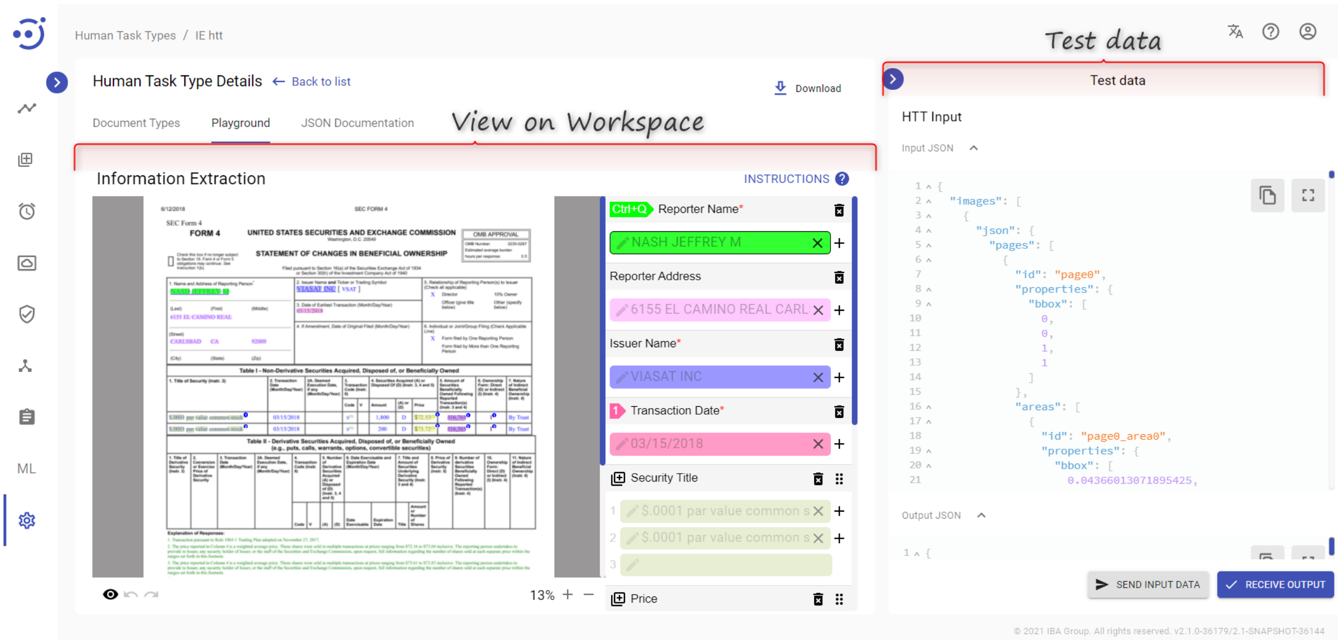
The Playground is a built-in Human Task Type editor that allows users to check how the Human Task operates on the Workspace.

- Form Task
- Classification Task
- Information Extraction Task

Overview

The Playground section consists of the two main areas:

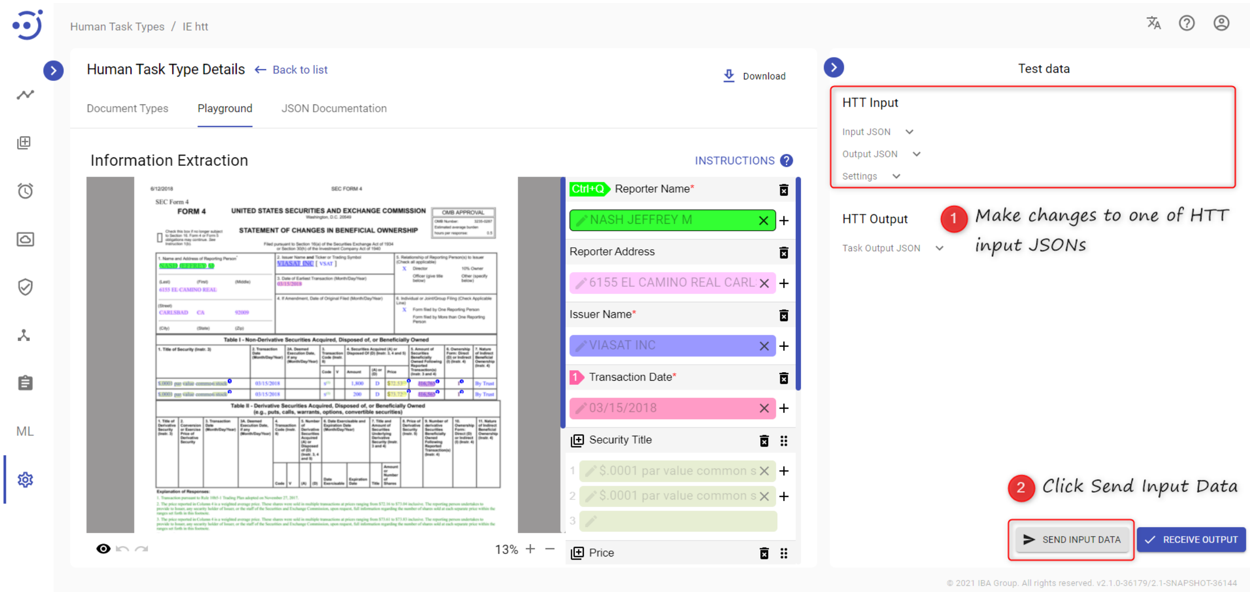
1. **View on Workspace** - which represents how the corresponding Human Task Type looks on the Workspace.
2. **Test Data** - which contains the Human Task Type Input and Output Data.



It is possible to make changes to both areas and see the effect of those changes straight away.

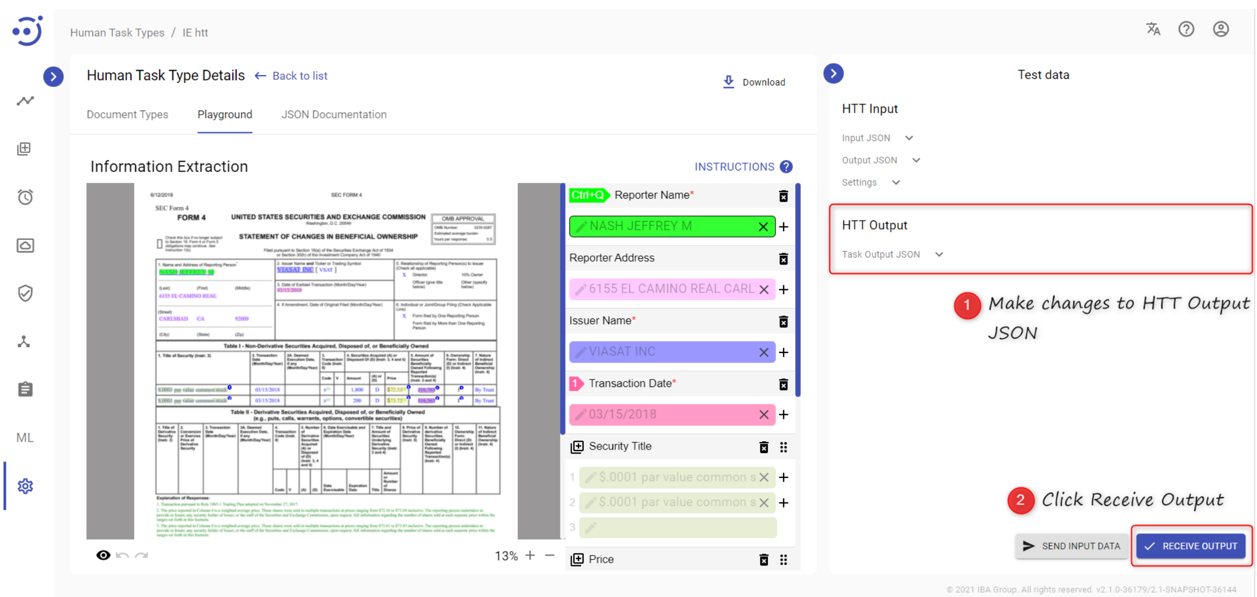
To see how the changes in the Test Data will reflect the view in the Workspace:

- Make changes to one of the **Human Task Type Input** JSONs.
- Click **Send Input Data**.



To see how changes in the Workspace reflect the Human Task Type Output:

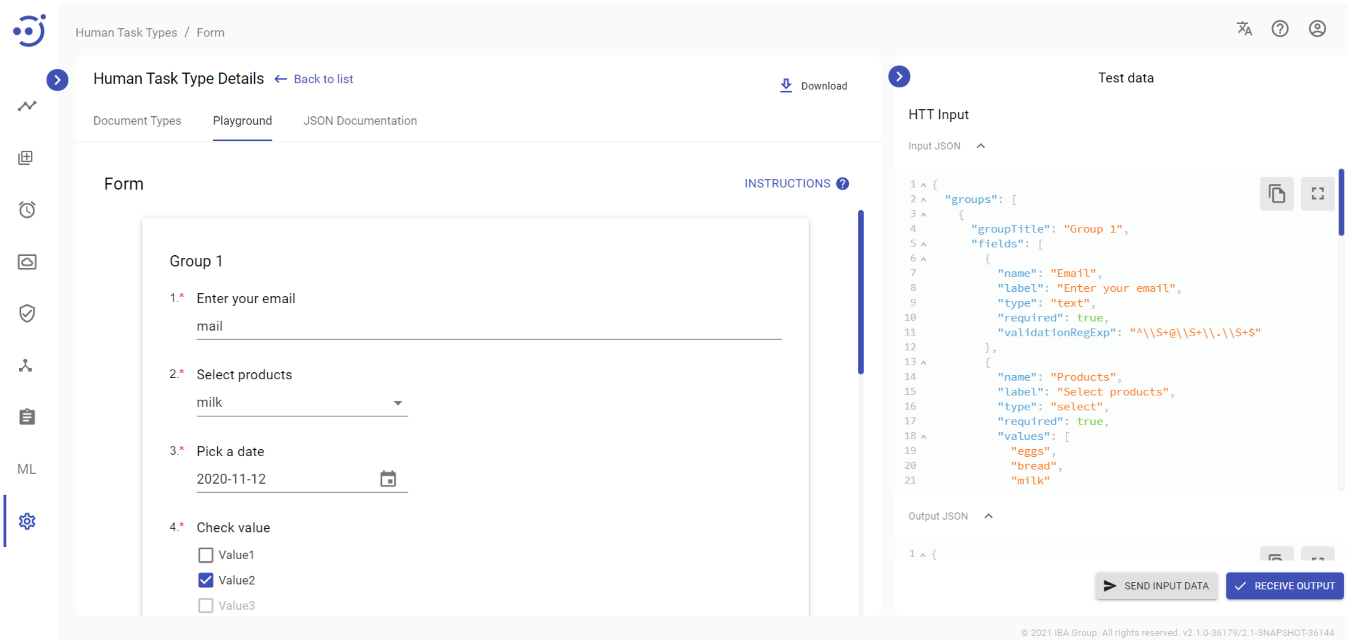
- Make changes to the **View on WorkSpace** area.
- Click **Receive Output**.



⚠️ The Playground serves only for testing purposes and the changes are not saved. If you refresh the page, it will return to its original view.

Form Task

The Form Task allows conducting surveys and assumes that the user fills out a customizable form.



Test Data

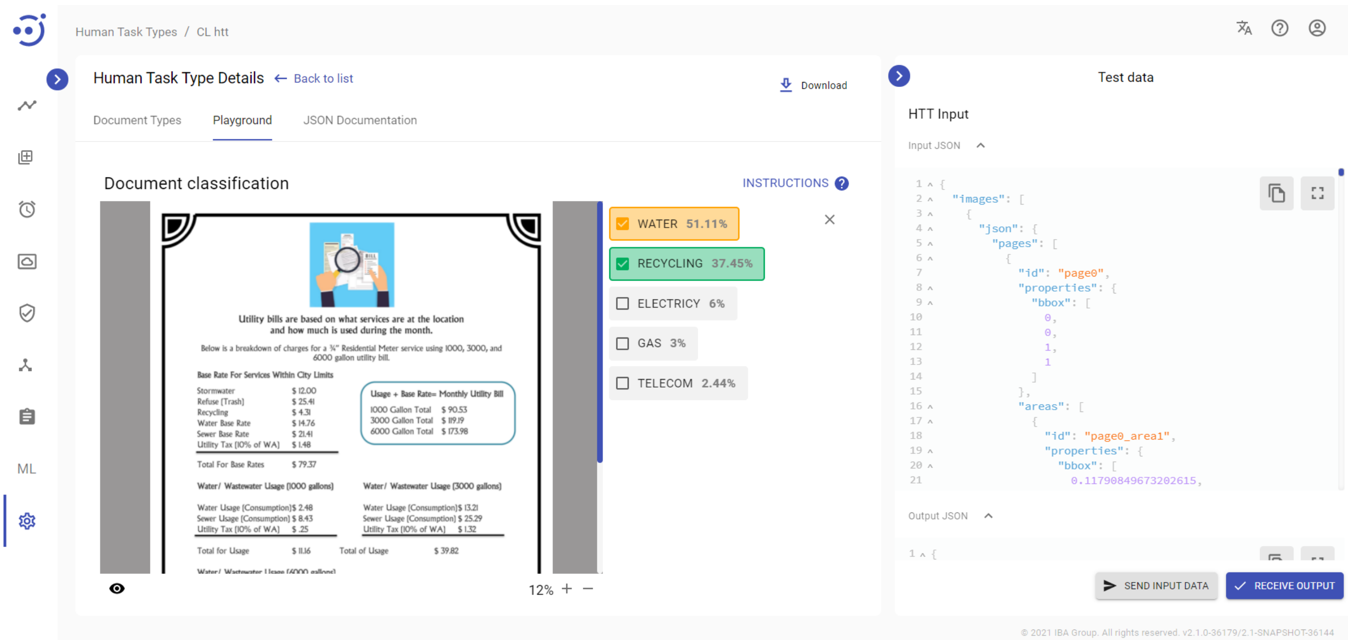
The test data of the Form HTT contains the following information:

- HTTP Input - contains the input of the Human Task.
    - *Input JSON* - contains the structure of the form that we see on the Workspace.
    - *Output JSON* - contains information entered in the form that we have as input on the Workspace (i.e. ML Model results that the human should review).
    - *Settings* - contain additional settings applied to the Form fields. For more details see Document Type Settings JSON Structure.
- HTTP Output - contains the output of the Human Task (the JSON file the automation process receives after the Human Task is completed).
    - *Output JSON* - contains the Human Task results in JSON format.

⚠️ The HTTP Output/ Output JSON has the same structure as the HTTP Input/ Output JSON. If there is nothing changed in the Human Task, the Output JSON will be equal to the HTTP Input/ Output JSON.

Classification Task

The Classification Task allows document classification by assigning them one or more categories (in Machine Learning - classes).



Test Data

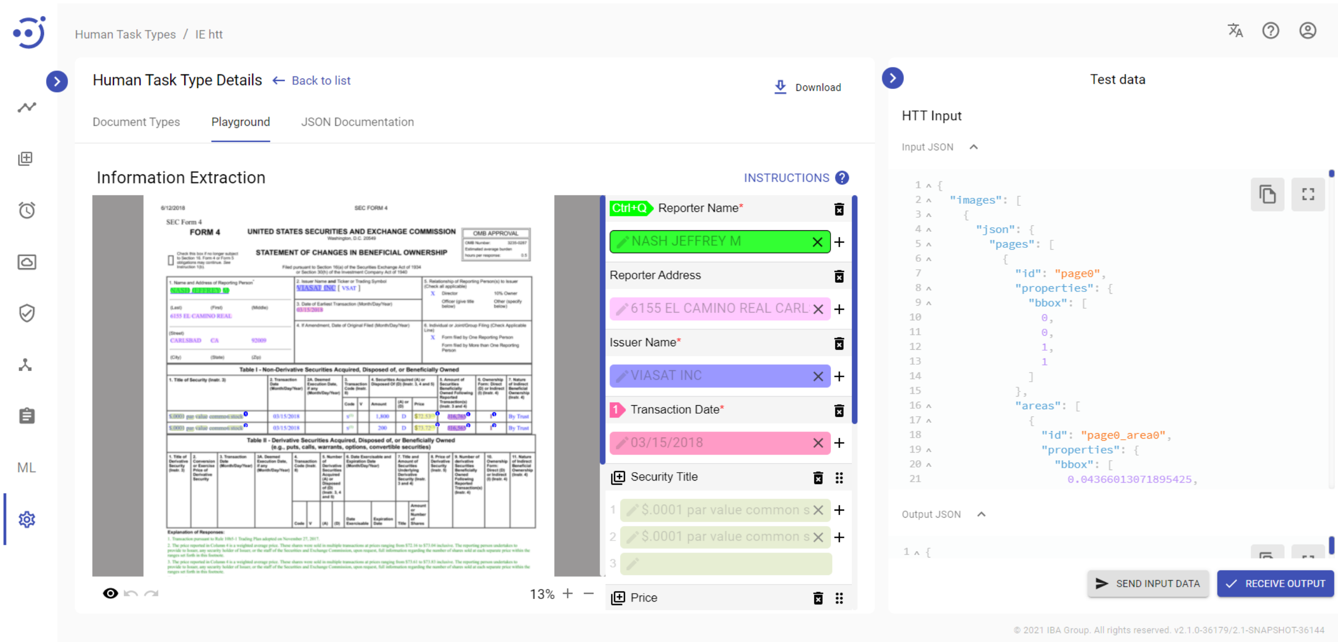
The test data of the Classification HTT contains the following information:

- HTTP Input - contains the input of the Human Task.
    - *Input JSON* - represents the document's OCR result in JSON format superimposed on the original document picture.
    - *Output JSON* - contains the information about selected classes in JSON format (i.e. ML model results that came to the Human Task for the human's review).
    - *Settings* - contain the list of categories (classes) and additional Human Task settings in JSON format. For more details see Document Type Settings JSON Structure.
- HTTP Output - contains the output of the Human Task (the JSON file the automation process receives after the Human Task is completed).
    - *Output JSON* - the JSON file contains the output results.

⚠ The HTTP Output/ Output JSON has the same structure as the HTTP Input/ Output JSON. If there is nothing changed in the Human Task, the Output JSON will be equal to the HTTP Input/ Output JSON.

Information Extraction Task

Information extraction (IE) is a process of extracting structured information (or key facts) from unstructured and/or semi-structured documents (invoices, claims, dividend news, etc.).



Test Data

The test data of the IE HTT contains the following information:

- HTTP Input - contains the input of the Human Task.
  - *Input JSON* - represents the document's OCR result in JSON format superimposed on the original document picture.
  - *Output JSON* - contains the input tagging results in JSON format (i.e. ML model tagging results that came to the Human Task for the human's review).
  - *Settings* - contain the categories to be extracted from the document, the validation rules applied to the categories, and additional Human Task settings in JSON format. For more details see Document Type Settings JSON Structure.
- HTTP Output - contains the output of the Human Task (the JSON file the automation process receives after the Human Task is completed).
  - *Output JSON* - the JSON file contains the output tagging results.

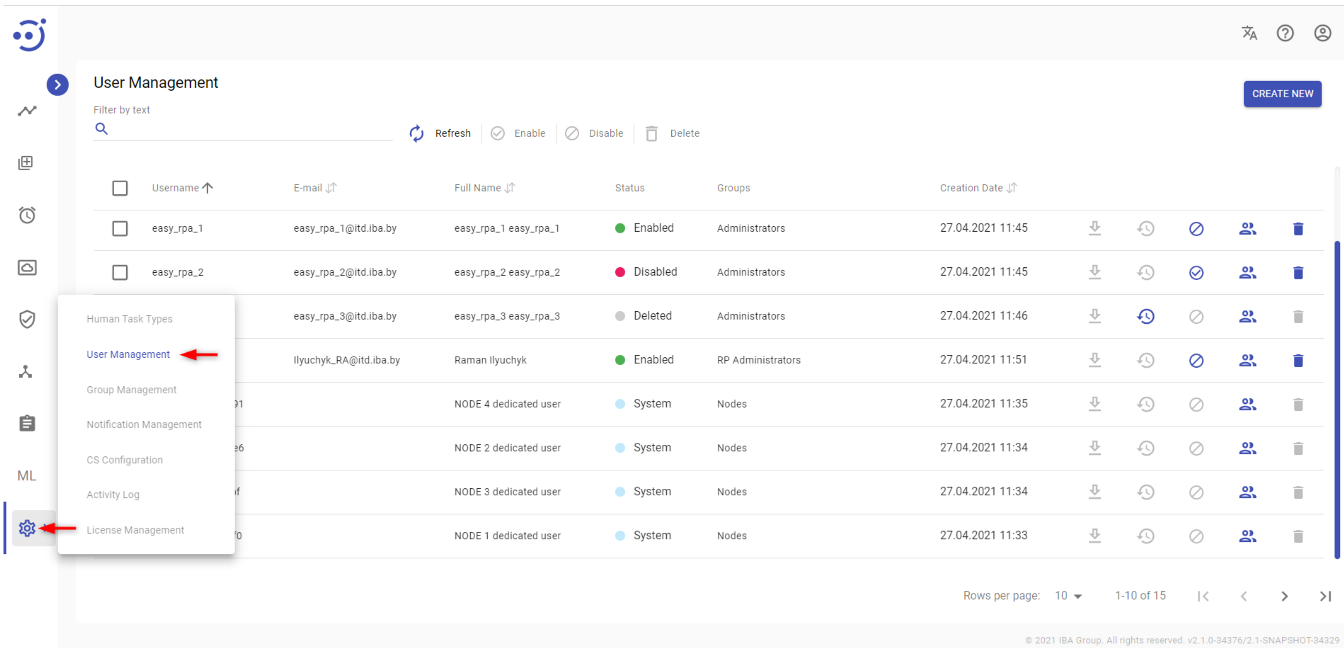
⚠️ The HTTP Output/ Output JSON has the same structure as the HTTP Input/ Output JSON. If there is nothing changed in the Human Task, the Output JSON will be equal to the HTTP Input/ Output JSON.

(v. 2.2) User Management

- Create a New User
- Password
- System User
- View/Edit a User Properties
- Delete, Disable/Enable, Restore a User
- Download Developer configuration of a User
- User Groups and Role Permissions

The User Management module displays a catalog of all the users in the system and provides access to all User Management functions. The Lightweight Directory Access Protocol, or LDAP for short, is used for easy management user accounts. All users are accessed from your external LDAP resource after adding users to EasyRPA and assigning user group with roles.

You can access the module by clicking **Administration User Management**. Required Permission: User-READ. See (v. 2.2) Role Permissions.



EasyRPA Control Server allows to perform the following actions:

- **Create** a new user via CREATE NEW icon above the table.
- **Edit** user properties and user groups via Edit User popup panel.
- **Delete** an existing user via the recycle bin control icon in the table row or Delete icon above the table.
- **Disable/Enable** an existing user profile via Disable/Enable icon in the table row or above the table.
- **Download Developer configuration** of an existing user via Download Developer configuration icon in the table row.
- **Restore** a deleted user via Restore icon in the table row.

Filter by text

Filtering allows you to search the user by the columns: Username, E-mail, Full Name, Status, Groups.

Sorting

Ascending/descending sorting is allowed for the columns: Username, E-mail, Full Name, Creation Date.

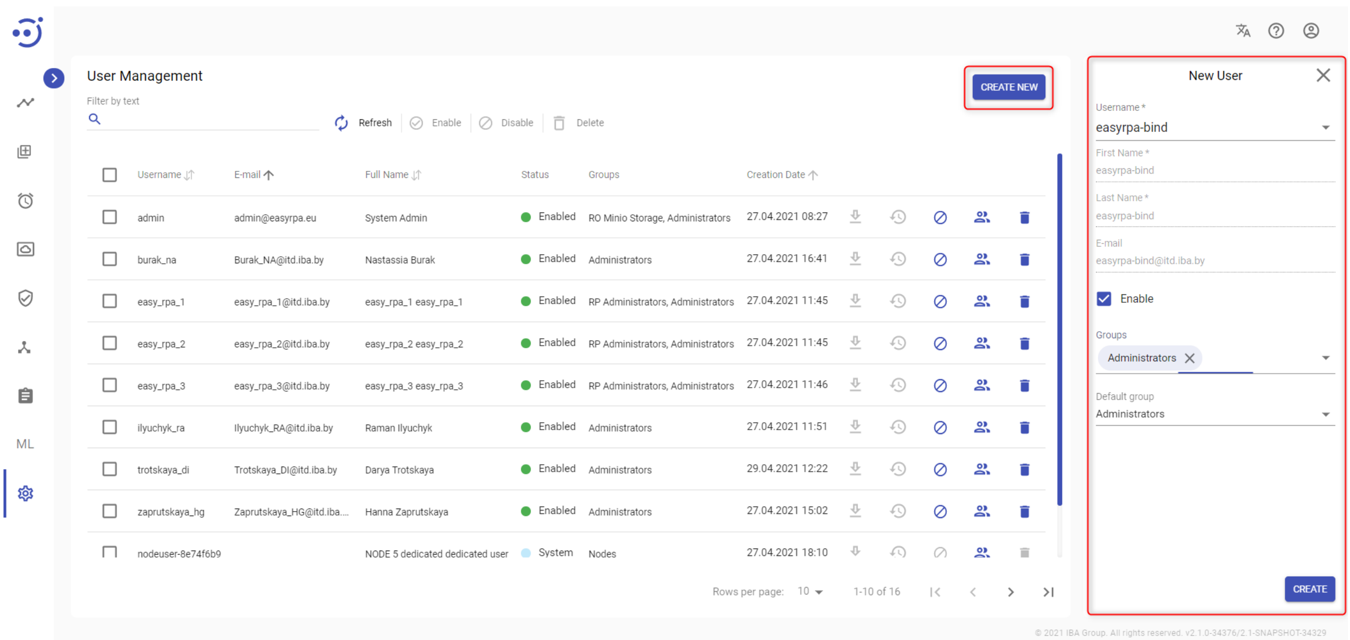
Create a New User

To create a user:

1. Go to the **User Management** module and click **CREATE NEW**. Required Permission: User-CREATE. See Role Permissions .
2. In the **New User** popup panel:

- Enter **Username**, **First Name** and **Last Name**, **Password**, **Confirm Password**, **E-mail** (optionally). If LDAP is enabled: Enter at least 3 letters of **Username** and choose user from available in the dropdown list. The user credentials cannot be changed since it is provided from your external LDAP resource.
- Tick **Enable user**, if necessary.
- Choose the user **Groups** from available in the dropdown list. To add a new User Group, go to **Administration Group Management**.
- Default group contains permissions and selected automatically, when you choose a group.

3. Click **CREATE**.



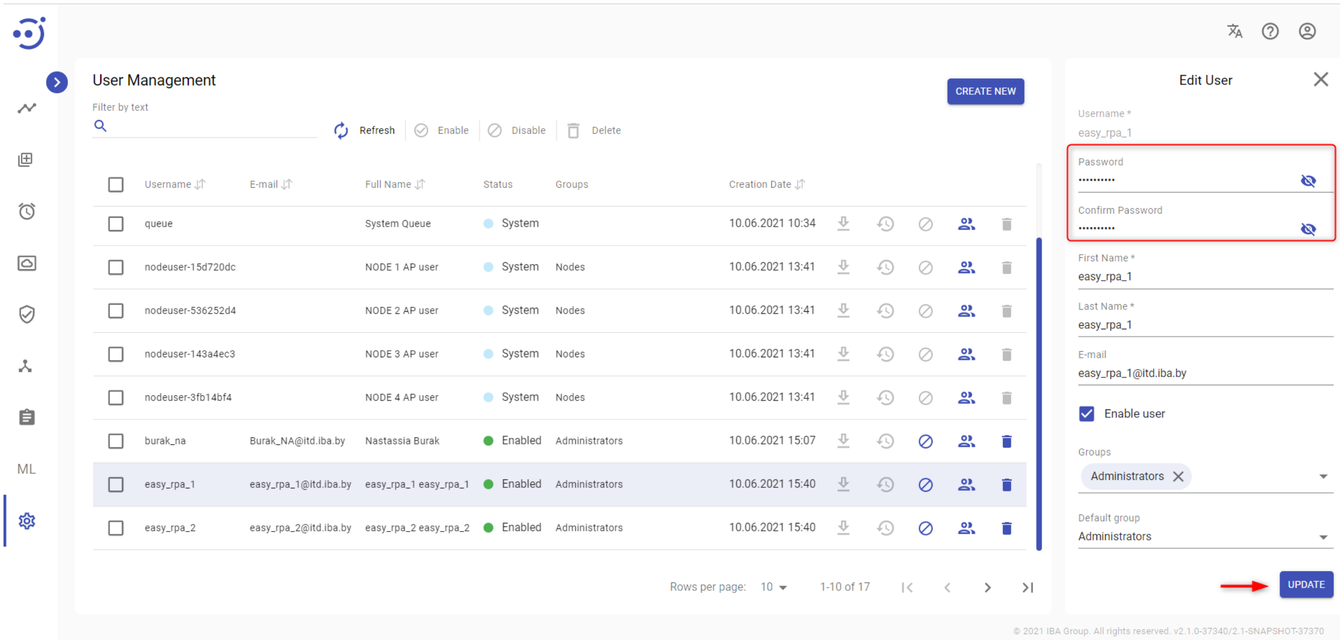
Password

Password requirements:

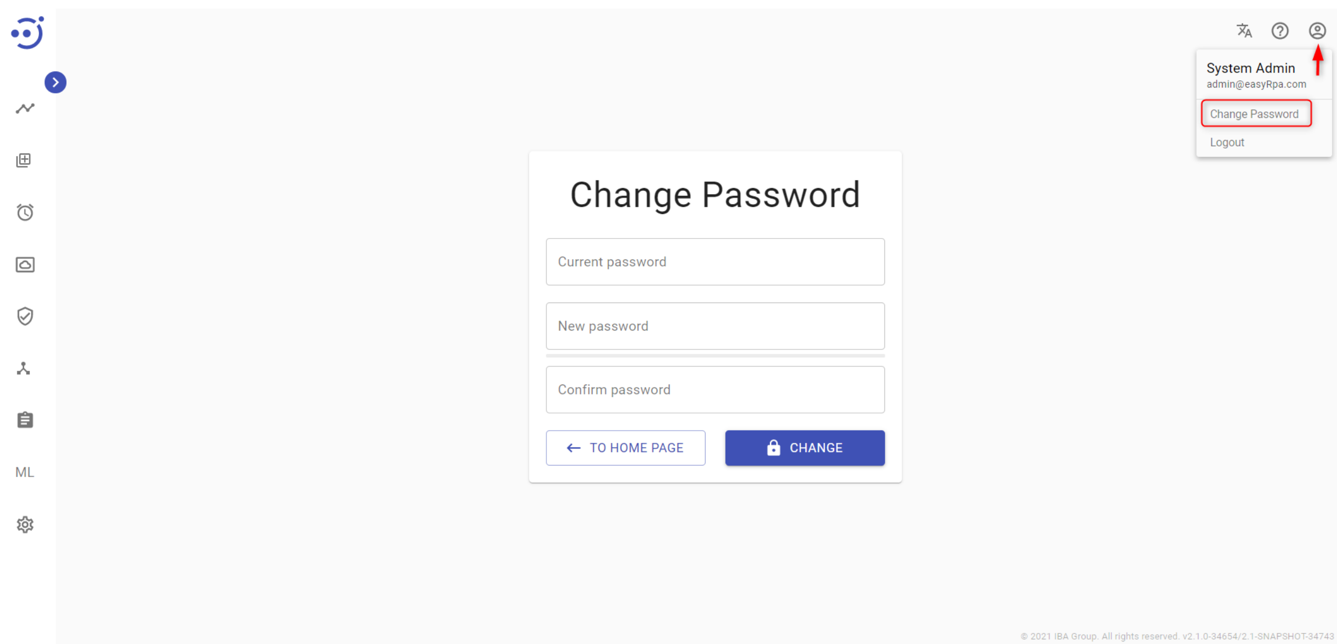
- Password should **not** contain the username.
- Passwords should be **longer** than 7 characters.
- Password contain **at least** 1 alpha, 1 numeric character, 1 character in lower case and 1 character in upper case.

Change password:

1. If LDAP is disabled, admin user clicks the corresponding user row, changes the password in the popup panel, and click **UPDATE**. Required Permissions: User-UPDATE. See (v. 2.2) Role Permissions.

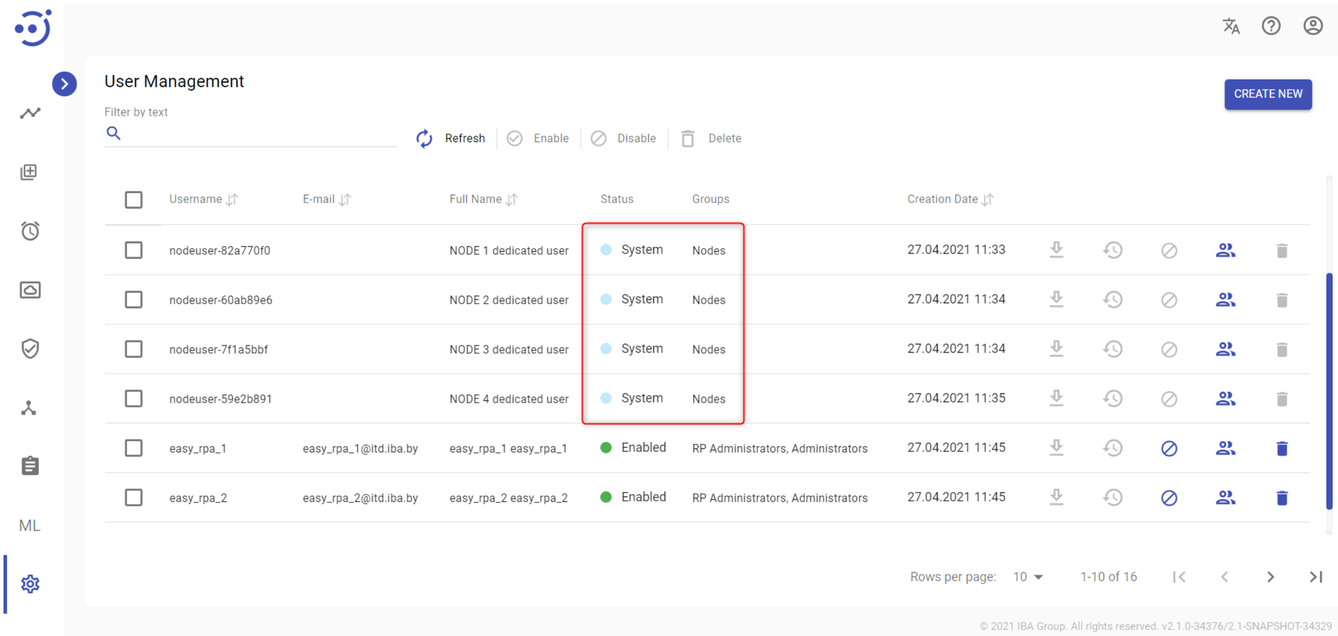


2. User clicks on the profile icon in the upper-right corner and selects "Change Password" row, fills in the specified fields: *Current password, New password, Confirm password* according to the password requirements and clicks **CHANGE.**

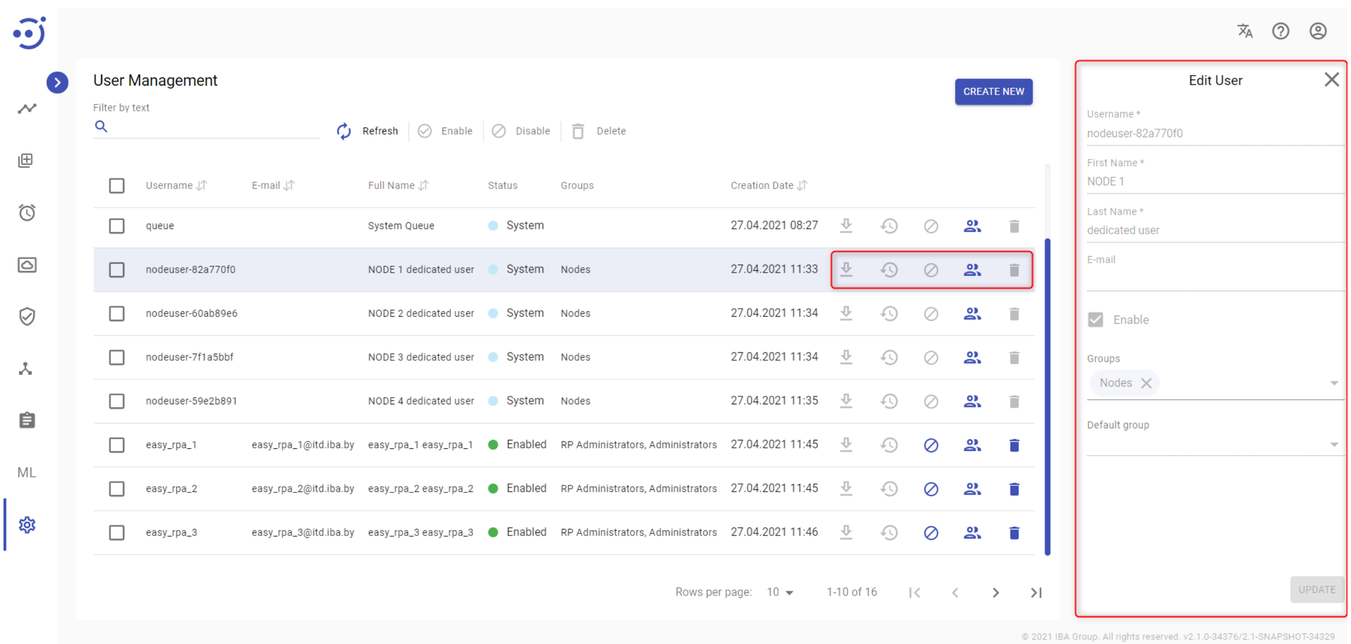


System User

The User Management module displays the system users, who are necessary for the correct operation of the application. They can be created automatically (*SCHEDULER*) or manually, when creating a user (*NODE*). System Users have the "System" status.



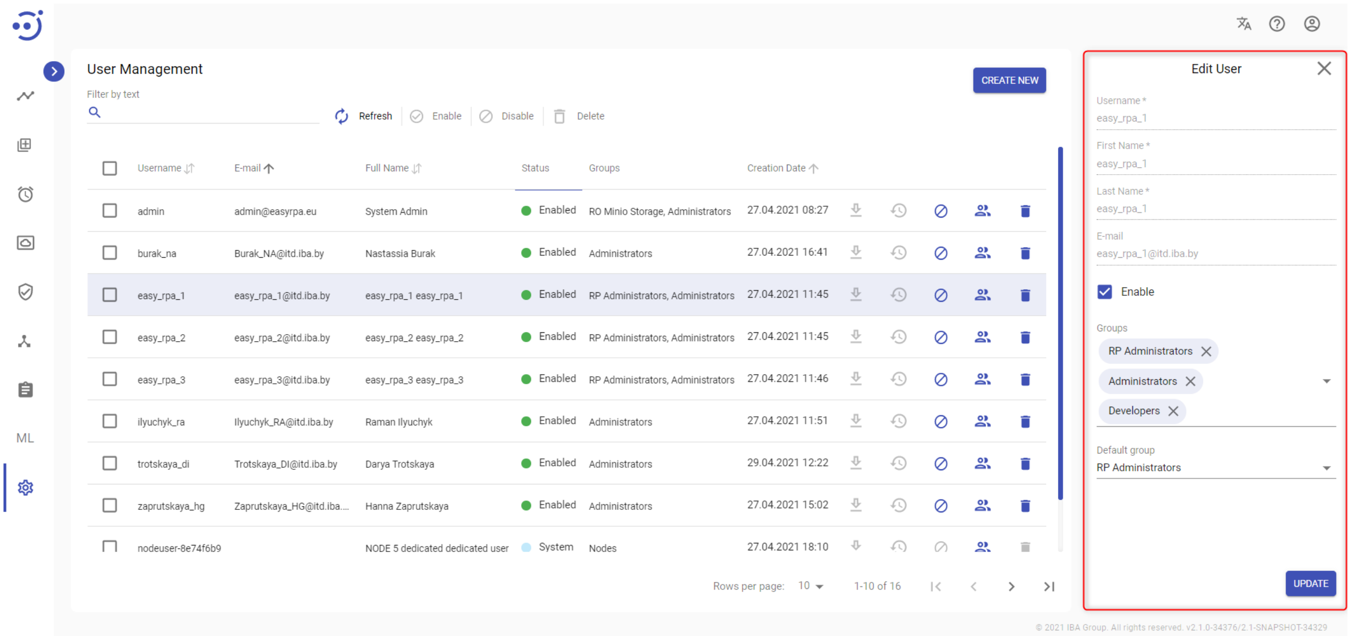
⚠️ System user cannot be edited or deleted.



View/Edit a User Properties

To view or edit user information, click the corresponding user row, make changes in the popup panel, and click **UPDATE**. Required Permissions: Required Permissions: User-UPDATE. See (v. 2.2) Role Permissions.

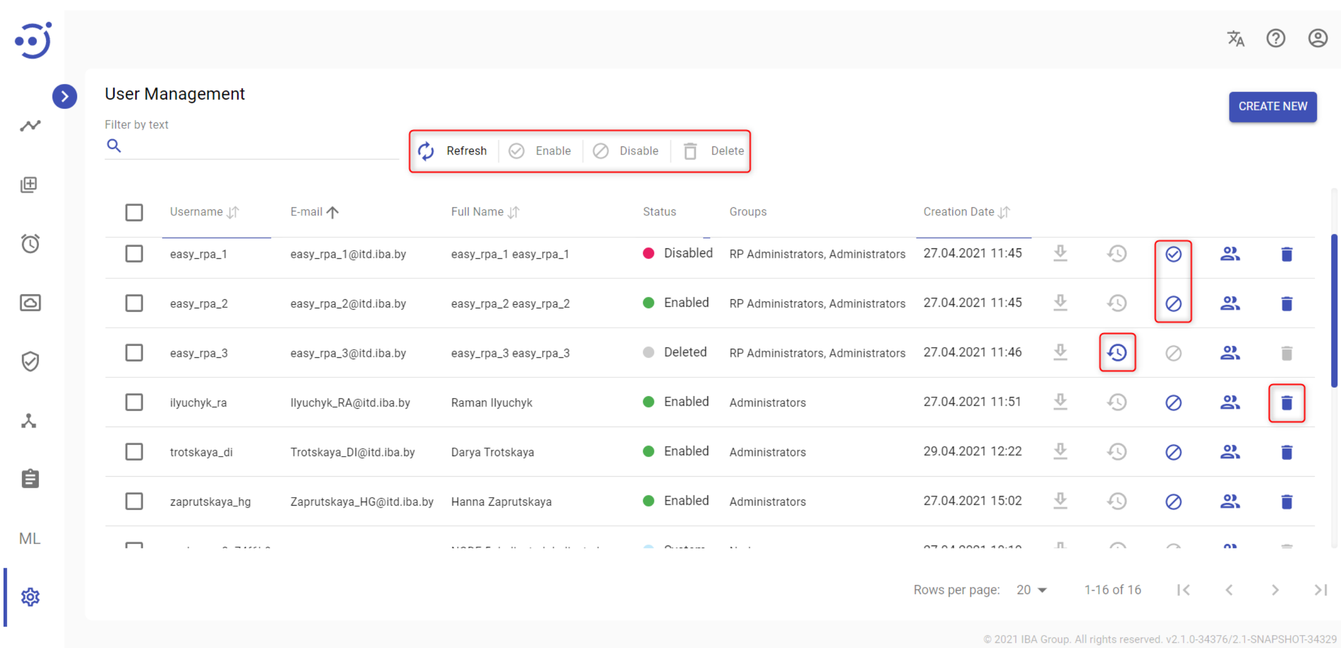
If LDAP is enabled, **Username**, **First Name**, **Last Name**, **Password**, **E-mail** cannot be changed.



Delete, Disable/Enable, Restore a User

To Delete user, use the recycle bin control icon in the table row or Delete icon above the table. Required Permissions: User-DELETE. See (v. 2.2) Role Permissions.

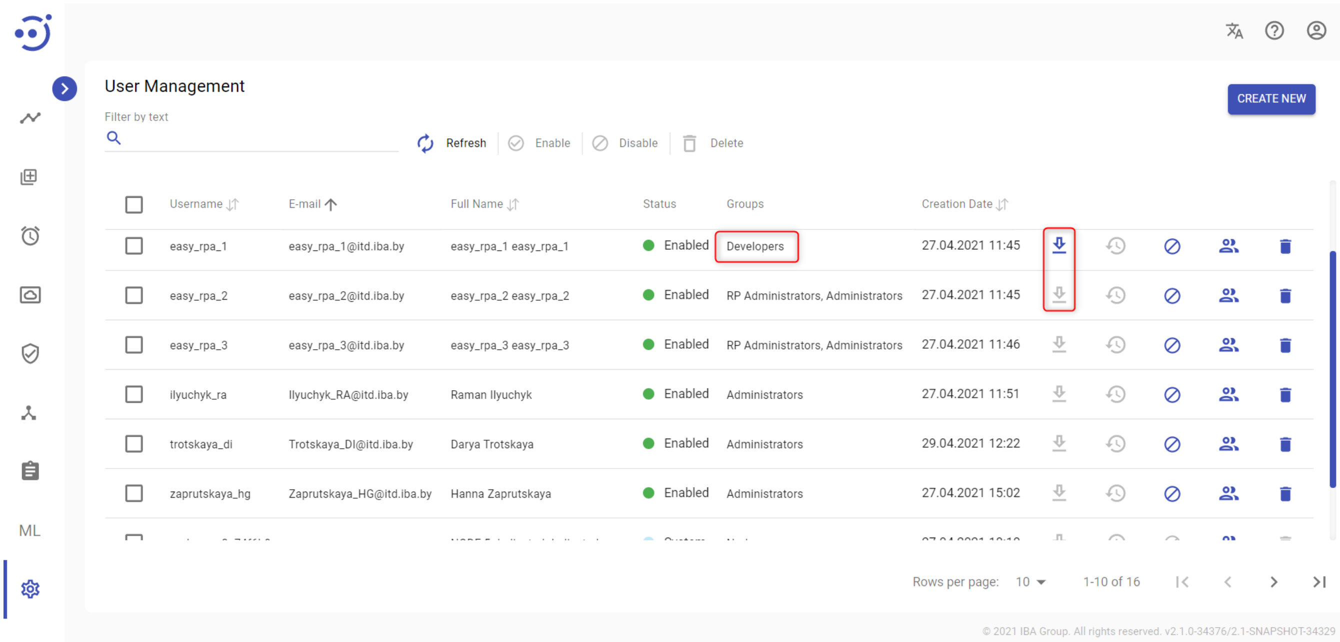
To Disable/Enable or Restore user, use the control icons in the table row or above the table. Required Permissions: User-UPDATE. See (v. 2.2) Role Permissions.



⚠️ Disabled and deleted users cannot log in to Control Server until they are enabled.

Download Developer configuration of a User

To Download Developer configuration of a user, use the control icon in the table row.



⚠️ Download Developer configuration icon is available only for a user who is in Developers group. Required Permission: User-READ. See (v. 2.2) Role Permissions.

User Groups and Role Permissions

Each Control Server user may have one or more groups in the system. To view or modify a User membership in Groups, go to **Administration Group Management Users** or open Edit User popup panel.

You can create a new Role with a custom set of Permissions and grant it to a user via Group membership. To view or modify Permissions for a User Role, go to **Administration Group Management Roles**.

(v. 2.2) Group Management

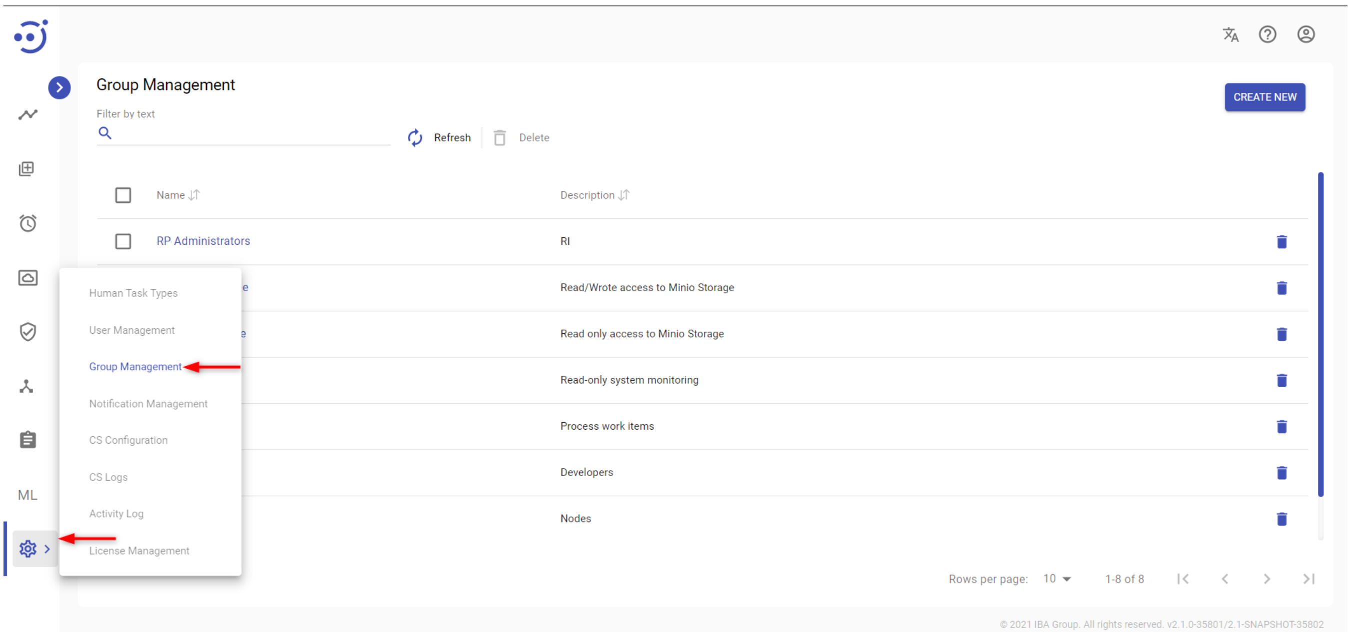
- Create a New Group
- View/Edit a Group Properties
- View/Edit Roles in a Group
- View/Edit Users in a Group
- Delete an Existing Group

The Group Management module displays a catalog of all the user groups and provides access to all group management functions.

Groups allow to combine users and assign roles to them. See (v. 2.2) User Management, Group Management#View/Edit Users in a Group, Group Management#View/Edit Roles in a Group.

To manage Groups, users must have Group Management modification permissions. See (v. 2.2) Role Permissions.

You can access the module by clicking **Administration Group Management**. Required Permission: Group-READ. See (v. 2.2) Role Permissions.



EasyRPA Control Server allows to perform the following actions:

- **Create** a new group via CREATE NEW icon above the table.
- **Edit** an existing group via Edit Group popup panel and its roles and users via Group Details.
- **Delete** an existing group via the recycle bin control icon in the table row or Delete icon above the table.
- **Pull** the last updates from the server via Refresh icon.

Filter by text

Filtering allows you to search the group by all columns.

Sorting

Ascending/descending sorting is allowed for all columns.

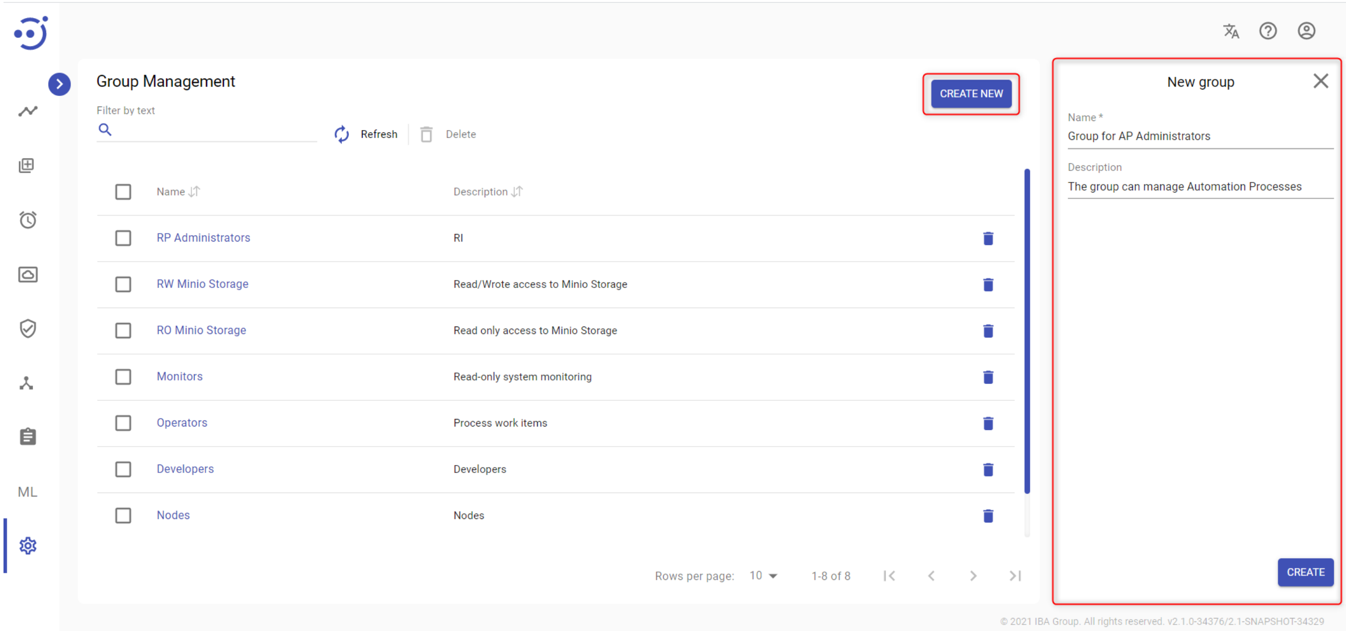
Create a New Group

To create a group:

1. Go to the **Group Management** module and click **CREATE NEW**. Required Permission: Group-CREATE. See (v. 2.2) Role Permissions.
2. In the **New group** popup panel:

- Enter a unique **Name** to distinguish the user group.

- Provide a user group **Description**.



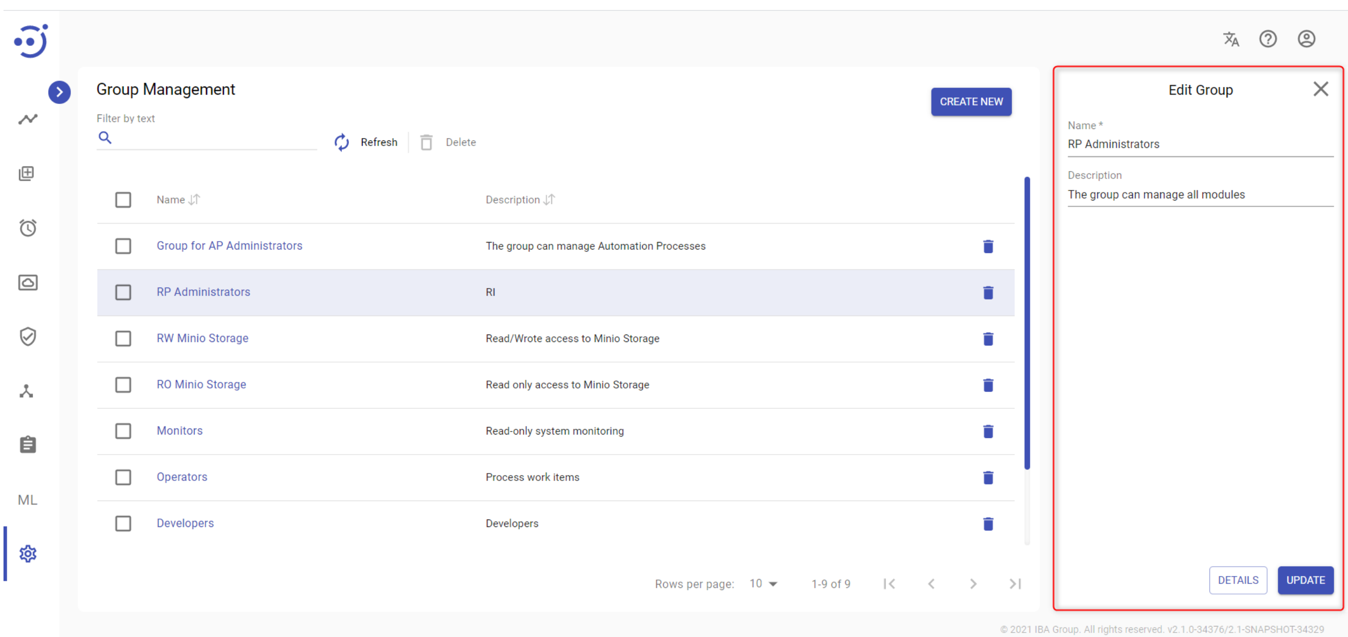
3. Click **CREATE**.

To combine users and assign roles to them:

- Group Management#View/Edit Roles in a Group
- Group Management#View/Edit Users in a Group

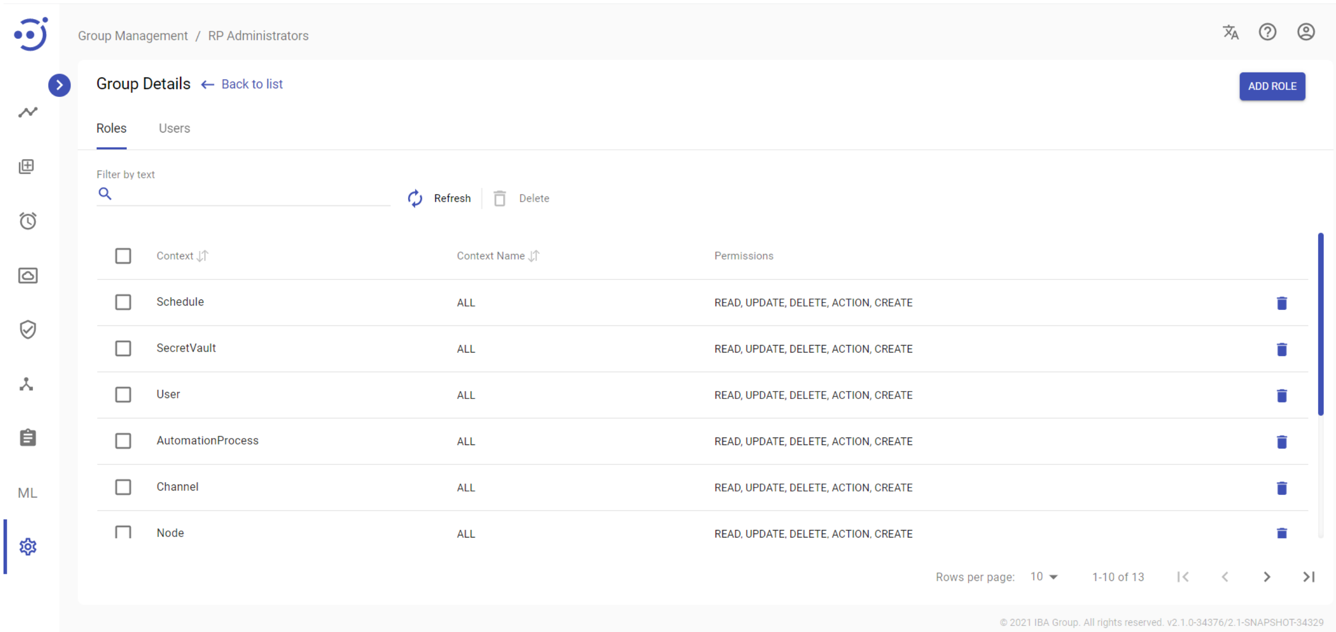
View/Edit a Group Properties

To view or edit group information, click the corresponding group row, make changes in the popup panel, and click **UPDATE**. Required Permissions: Group-READ,UPDATE. See (v. 2.2) Role Permissions.



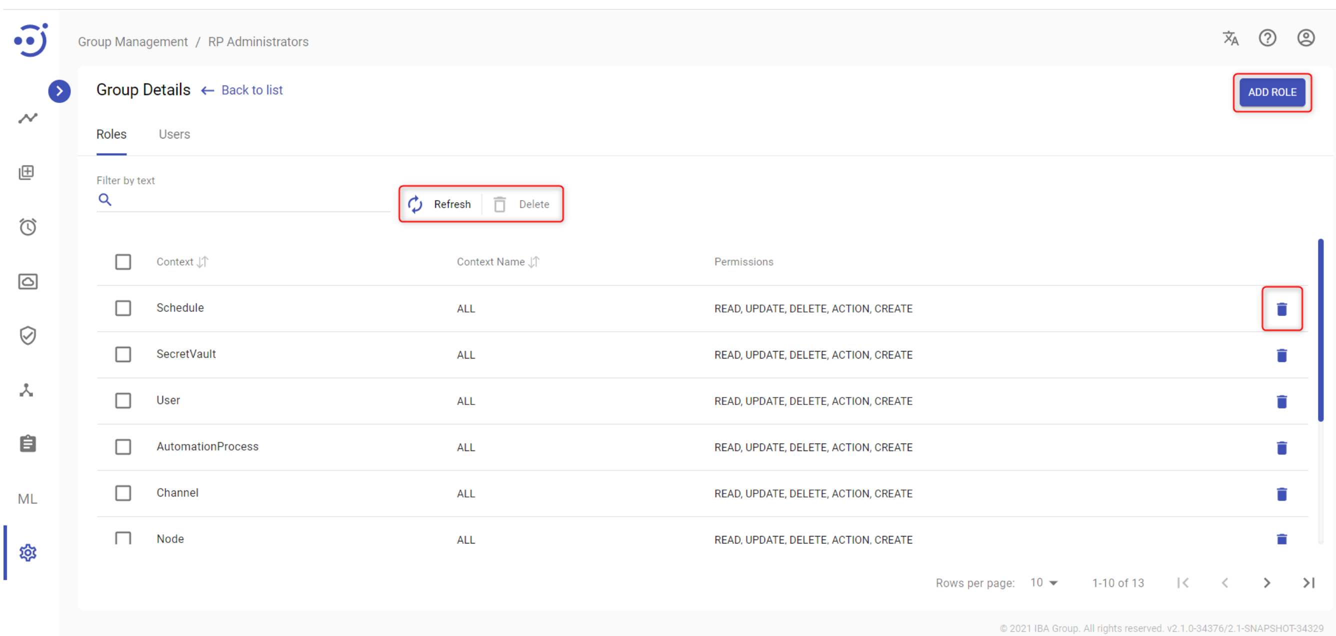
View/Edit Roles in a Group

To view or edit roles in a group, click Name of a Group, or click the corresponding group row and click **DETAILS**:



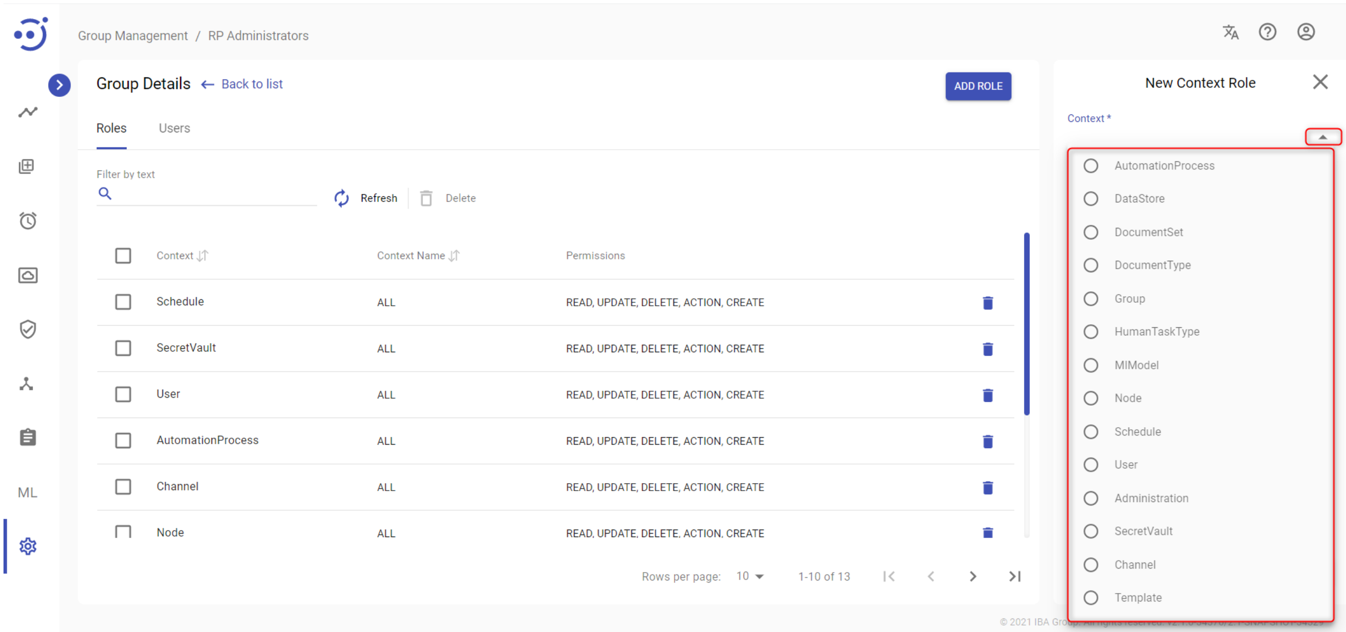
Control Icons

- **ADD ROLE** - to add a role in the group. Required Permissions: Group-READ,UPDATE. See (v. 2.2) Role Permissions.
- **Refresh** - to pull the last updates from the server via Refresh icon.
- **Delete** - to delete the selected role in the group (via the recycle bin control icon in the table row or Delete icon above the table). Required Permissions: Group-READ,UPDATE. See (v. 2.2) Role Permissions.

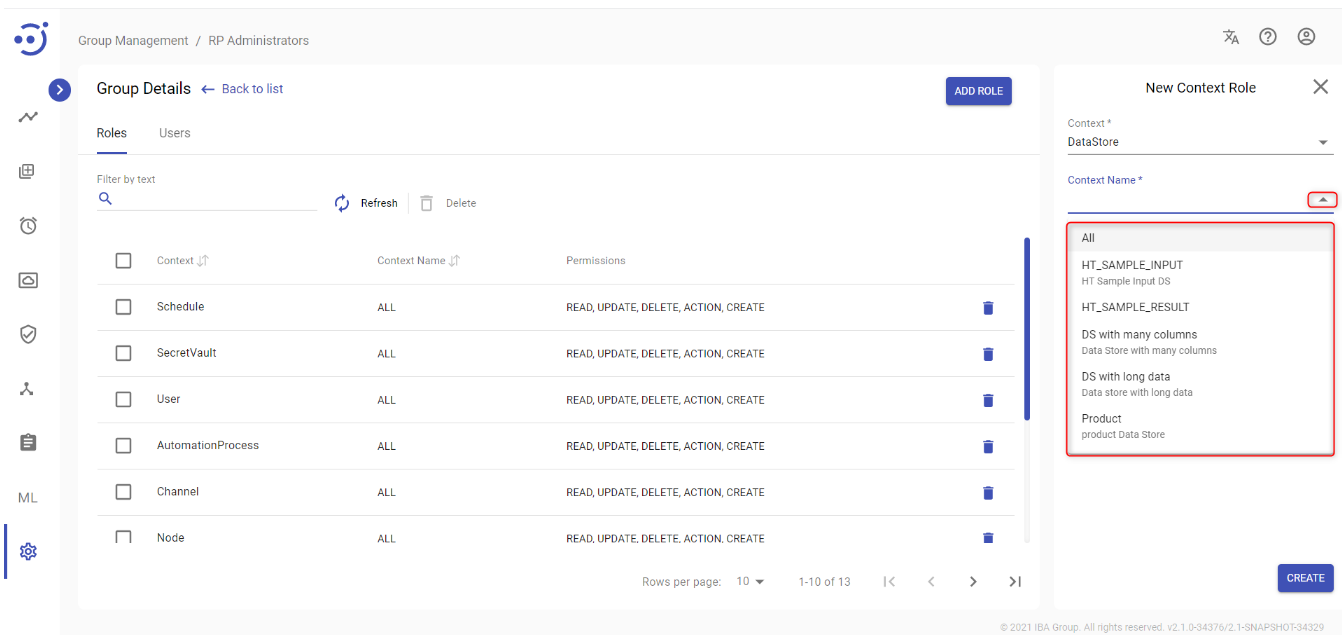


When adding a role you are able to choose:

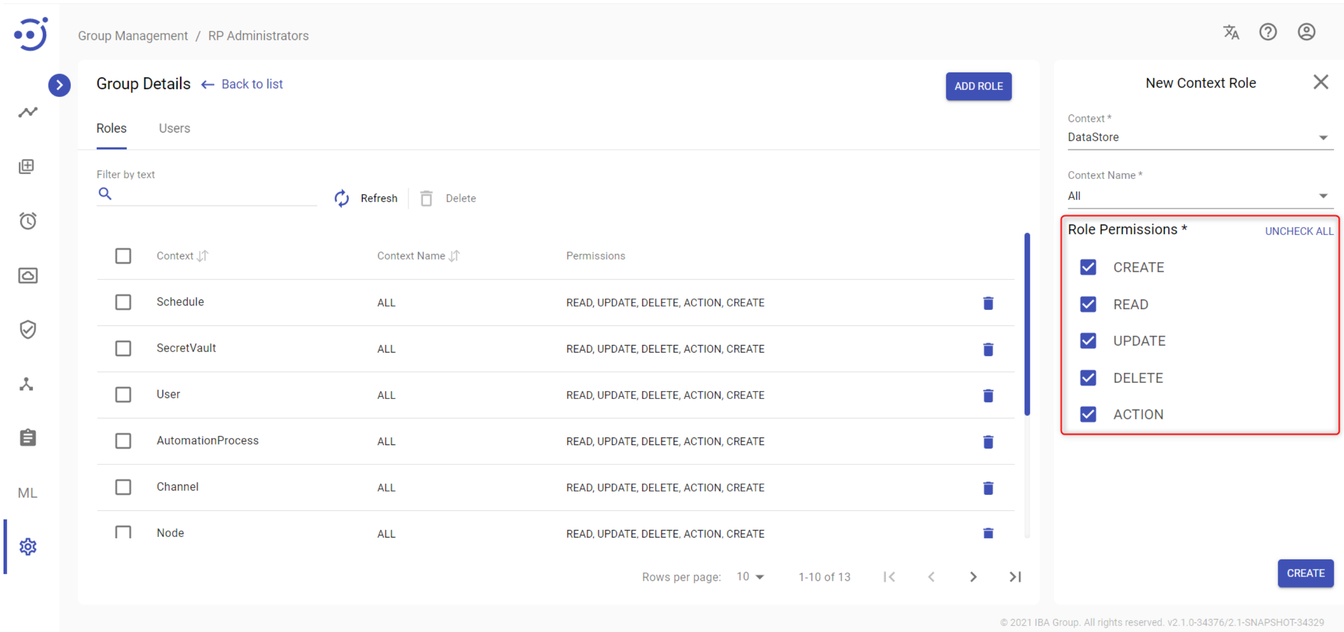
- **Context** - to specify what module you are going to manage. See (v. 2.2) Role Permissions.



- **Context Name** - to choose all or a specific entity to manage.



- **Role Permissions** - to select appropriate role permissions from the list. See (v. 2.2) Role Permissions.



Filter by text

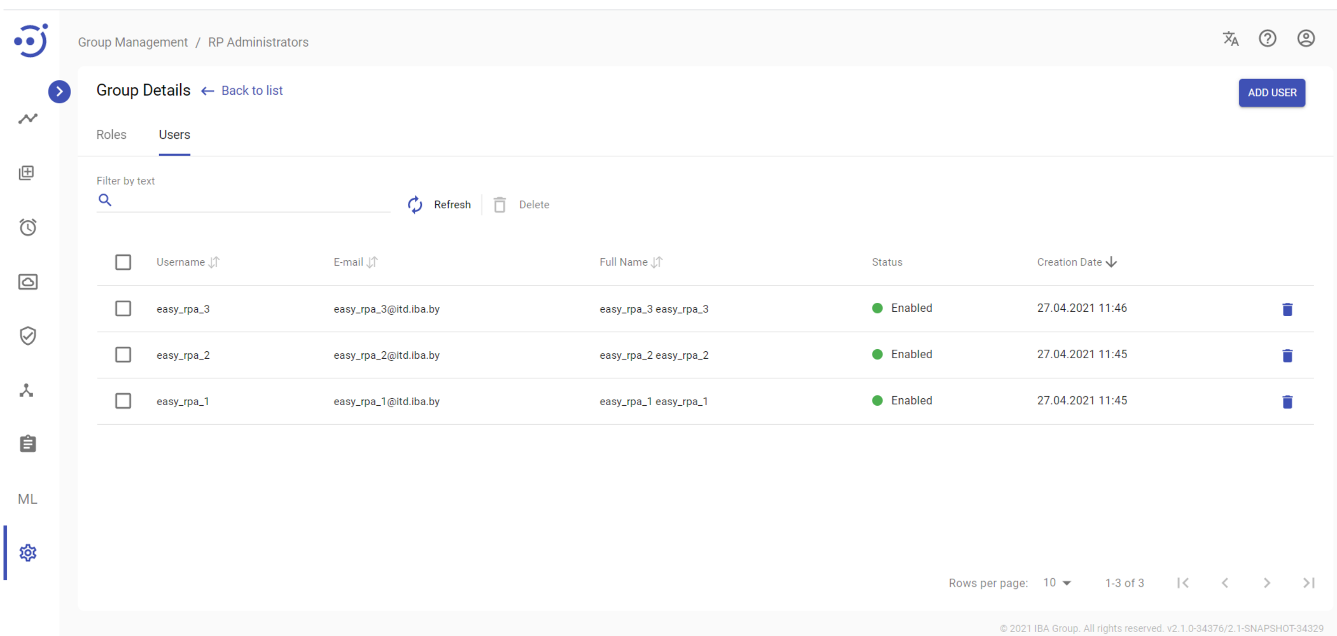
Filtering allows you to search the role by the columns: Context, Context Name.

Sorting

Ascending/descending sorting is allowed by the columns: Context, Context Name.

View/Edit Users in a Group

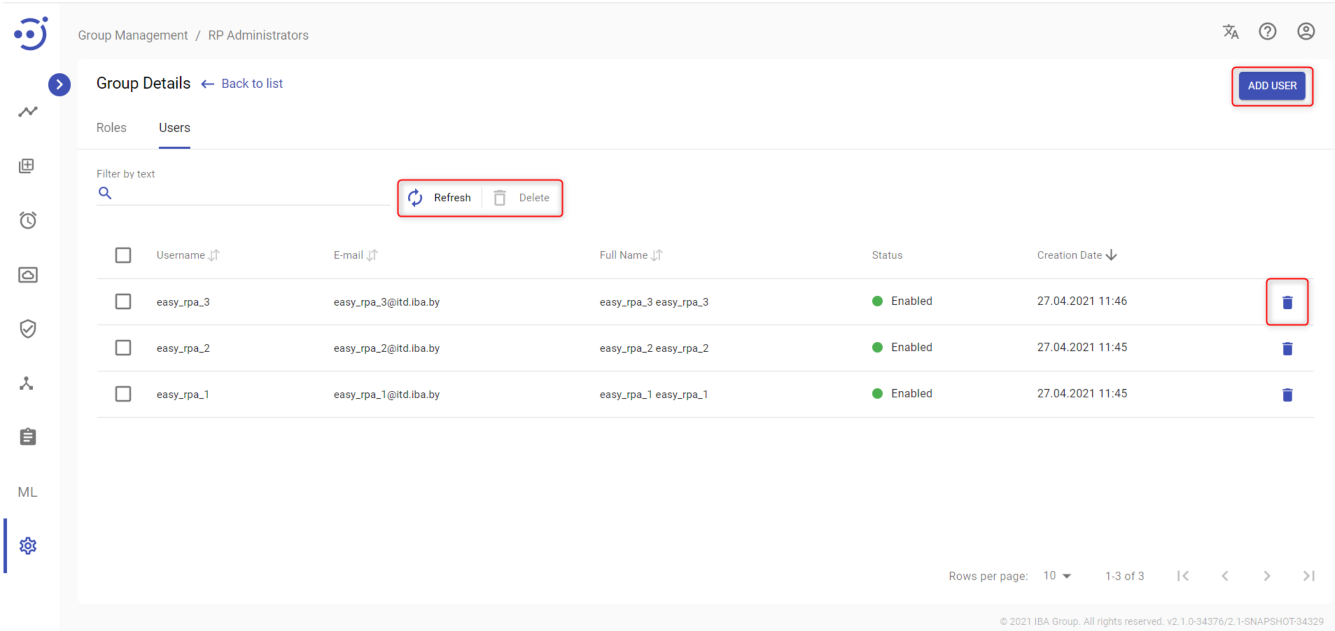
To view or edit users in a group, click Name of a Group and open **Users** tab, or click the corresponding group row, click **DETAILS** and open **Users** tab:



Control Icons

- **ADD USER** - to add a user in the group. Required Permissions: Group-READ,UPDATE and User-READ. See (v. 2.2) Role Permissions.
- **Refresh** - to pull the last updates from the server via Refresh icon.

- **Delete** - to delete the selected user in the group (via the recycle bin control icon in the table row or Delete icon above the table) . Required Permissions: Group-READ,UPDATE. See (v. 2.2) Role Permissions.



Filter by text

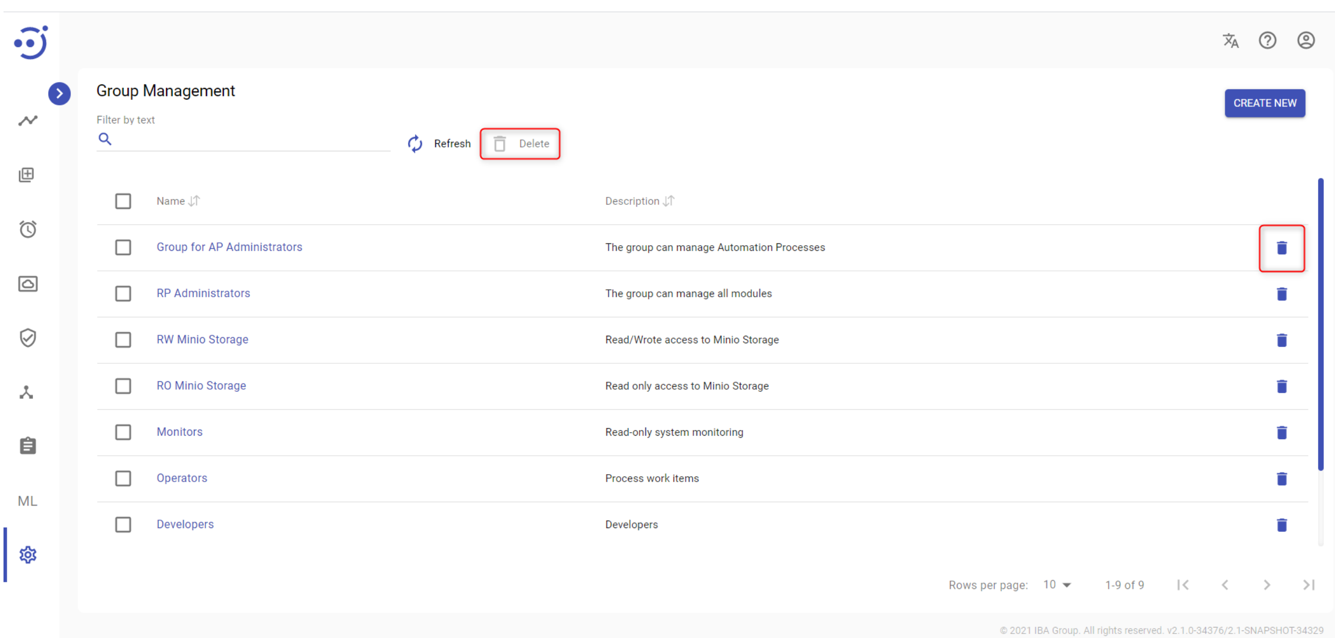
Filtering allows you to search the user by the columns: Username, E-mail, Full Name, Status.

Sorting

Ascending/descending sorting is allowed for the columns: Username, E-mail, Full Name, Creation Date.

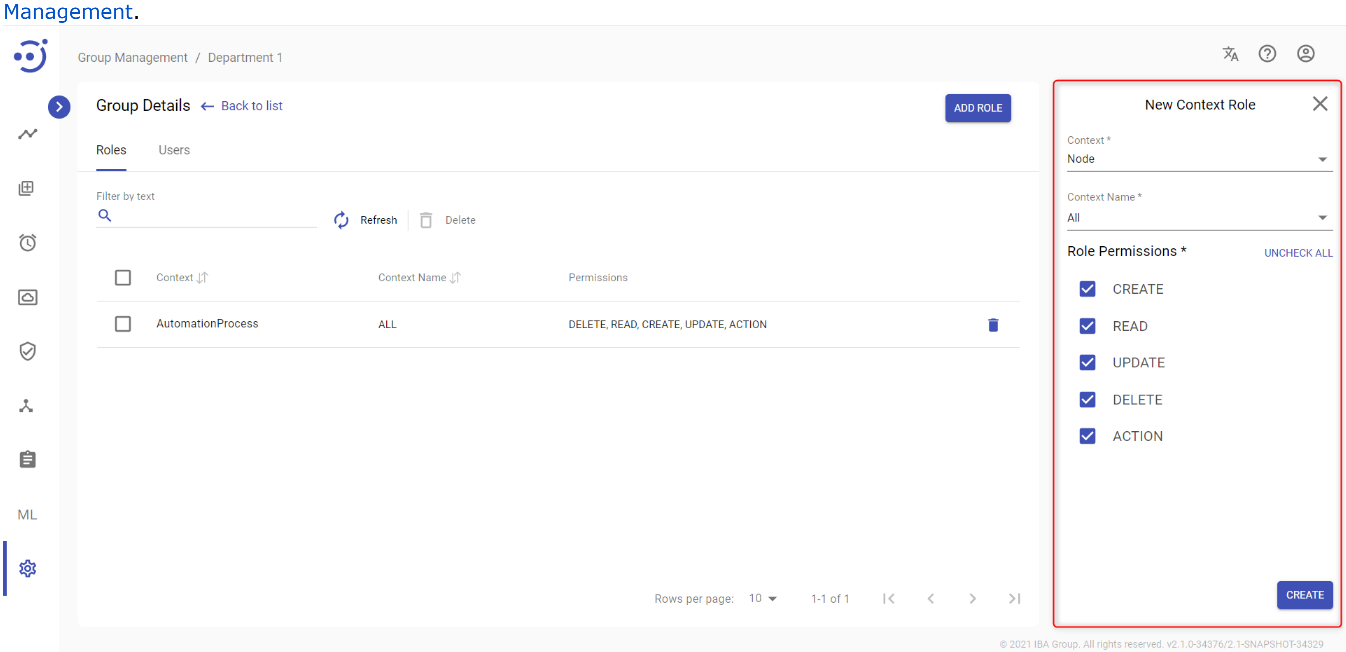
Delete an Existing Group

To **delete** the user group, use the recycle bin control icon in the table row or Delete icon above the table. Required Permissions: Group-READ,DELETE. See (v. 2.2) Role Permissions.



(v. 2.2) Role Permissions

Role Permissions can be granted to the user while creating a new User Group or editing an existing one. See (v. 2.2) Group Management.



Role Permissions Description

All the Role Permissions are divided into groups according to relation to the modules in use.

There are the following Context types:

- AutomationProcess
- DataStore
- DocumentSet
- DocumentType
- Group
- HumanTaskType
- MlModel
- Node
- Schedule
- User
- Administration

- SecretVault
- Channel
- Template

There are five types of Role Permissions:

- READ
- CREATE
- UPDATE
- DELETE
- ACTION.

Each Context can be configured for a particular entity (i.e. Context Name) or for ALL scope. ALL scope applies to all entities (existing now or created in the future) of a given Context type. If Context type has READ permission configured for ALL scope and only UPDATE permission for a particular Context Name, overall permissions for this Context Name will be READ and UPDATE.

⚠ CREATE permission only applies in ALL scope.

One of the User Groups must be defined as Default group for a user (see (v. 2.2) User Management). Any entities created by the user will be automatically linked to the default User Group. It means that missing permissions in the default User Group are created for the entity. E.g. after *a node "example"* is created with role *Node-ALL-CREATE*, role *Node-example-DELETE, UPDATE, READ, ACTION* is added to the default User Group.

AutomationProcess related

⚠ The user should have at least READ permission of Channel and Template Context to create/update an automation process notification.

- **CREATE**
  – to create a new automation process.
  – to upload an automation process.
- **READ**
  – to view the list of automation processes.
  – to see the list of dedicated automation processes.
  – to view the Automation Process Details.
  – to save automation process as JSON file.
  – to view the list of automation process runs in the Automation Processes/Schedules/Node Management/Document Sets modules.
  – to view and manage an automation process run history.
  – to view and manage an automation process run event log.
  – to view the automation process configuration parameters.
  – to download automation process configuration parameters.
  – to view the automation process JSON input data.
  – to view the automation process notifications.
  – to navigate to Runs Management module and view the list of active runs.
- **UPDATE**
  – to update an existing automation process.
  – to delete an automation process run.
  – to add a new automation process configuration parameter.
  – to update an existing automation process configuration parameter.
  – to upload a new automation process configuration parameter.
  – to delete an existing automation process configuration parameter.
  – to update/upload input data.
  – to add a new automation process notification.
  – to update an existing automation process notification.
  – to delete an existing automation process notification.
- **DELETE**
  – to delete an existing automation process.
- **ACTION**
  – to start an automation process run.
  – to stop an automation process run.
  – to retry an automation process run.

DataStore related

- **CREATE**
  – to create/upload a new data store.

- **READ**
  – to view the list of data stores.
  – to download an existing data store.
  – to view the list of data store records (Data Stores Data Store Details).
  – to download the list of data store records (Data Stores Data Store Details).
- **UPDATE**
  – to update an existing data store.
  – to create a new data store record.
  – to update/delete an existing data store record.
- **DELETE**
  – to delete an existing data store.
- **ACTION**
  – backup permission for future usages.

DocumentSet related

The user should have at least READ permission of AutomationProcess and DocumentType Context to create/update a Document Set.

- **CREATE**
  – to create a new Document Set.
- **READ**
  – to view the list of Document Sets.
  – to view the Document Set details.
  – to export a Document Set.
  – to view the list of documents for a Document Set.
  – to view the document details and open output.
- **UPDATE**
  – to update an existing Document Set.
  – to upload documents.
  – to import a Document Set.
  – to edit an existing document.
  – to delete an existing document.
- **DELETE**
  – to delete an existing Document Set.
- **ACTION**
  – to run a process for documents using Process drop-down list.

DocumentType related

The user should have at least READ permission of HumanTaskType Context to view the list of document types in a Human Task Type and at least READ permission of Channel and Template Context to create/update a Document Type notification.

- **CREATE**
  – to create a Document Type (Human Task Types -> Human Task Type Details -> tab Document Types).
- **READ**
  – to view the list of document types (Human Task Types -> Human Task Type Details -> tab Document Types).
  – to view the Document Type details (Human Task Types -> Human Task Type Details -> tab Document Types).
  – to view the list of human tasks (Workspace module).
  – to start working with a human task (Workspace module).
  – to view the document type notifications (Human Task Types -> Human Task Type Details -> tab Document Types -> Document Type Notifications).
- **UPDATE**
  – to update a Document Type (Human Task Types -> Human Task Type Details -> tab Document Types).
  – to add a new Document Type notification (Human Task Types -> Human Task Type Details -> tab Document Types -> Document Type Notifications).
  – to update an existing Document Type notification (Human Task Types -> Human Task Type Details -> tab Document Types -> Document Type Notifications).
  – to delete an existing Document Type notification (Human Task Types -> Human Task Type Details -> tab Document Types -> Document Type Notifications).
- **DELETE**
  – to delete a Document Type (Human Task Types -> Human Task Type Details -> tab Document Types).
- **ACTION**
  – to accept a human task (Workspace module).

Group related

The user should have at least READ permission of User Context to add users in an existing user group

- CREATE
  – to create a user group.
  – to create a user group for the corresponding entity using Security Access.
- READ
  – to view the list of user groups.
  – to view the user group description.
  – to view the list of roles for an existing user group.
  – to view the list of users for an existing user group.
  – to view the list of groups (and roles) for the corresponding entity using Security Access.
- UPDATE
  – to update the user group description.
  – to add/update/delete roles in an existing user group.
  – to add/delete users in an existing user group.
  – to update an existing user group for the corresponding entity using Security Access.
- DELETE
  – to delete an existing user group.
- ACTION
  – backup permission for future usages.

HumanTaskType related

- CREATE
  – to create a human task type.
- READ
  – to view the list of human task types.
  – to view the human task type details.
  – to download application.
- UPDATE
  – to update an existing human task type.
- DELETE
  – to delete an existing human task type.
- ACTION
  – backup permission for future usages.

MlModel related

- CREATE
  – to import a model.
  – to train a new model.
- READ
  – to view the list of models.
  – to export ML Model Package and Training Config of an existing model.
  – to view model log.
- UPDATE
  – backup permission for future usages.
- DELETE
  – to delete an existing model.
- ACTION
  – backup permission for future usages.

Node related

The user should have at least READ permission of Channel and Template Context to create/update a node notification.

- CREATE
  – to create a new node.
- READ
  – to view the list of nodes.
  – to view the Node Details.
  – to view the node configuration parameters list.
  – to download the node configuration parameters list.
  – to view the node features list.
  – to view a node feature configuration.
  – to view a node logs and node feature logs.
  – to view the node notifications.
- UPDATE
  – to update an existing node.

- to create a new node configuration parameter.
- to update an existing node configuration parameter.
- to upload a new node configuration parameter.
- to delete an existing node configuration parameter.
- to update a node feature configuration JSON.
- to import CSV with configuration parameters.
- to enable/disable a node feature.
- to add a new node notification.
- to update an existing node notification.
- to delete an existing node notification.

- **DELETE**
  – to delete an existing node.
- **ACTION**
  – to restart/shut down node.
  – to download node agent package.
  – to ping all nodes.
  – to upgrade node version.
  – to restart a node feature.

Schedule related

The user should have at least READ permission of AutomationProcess Context to create a Schedule and at least READ permission of Channel and Template Context to create/update a schedule notification.

- **CREATE**
  – to create a new schedule.
- **READ**
  – to view the list of schedules.
  – to view the Schedule Details.
  – to view the schedule notifications.
- **UPDATE**
  – to update/enable/disable an existing schedule.
  – to add a new schedule notification.
  – to update an existing schedule notification.
  – to delete an existing schedule notification.
- **DELETE**
  – to delete an existing schedule.
- **ACTION**
  – backup permission for future usages.

User related

The user should have at least READ permission of Group Context to create/update a user.

- **CREATE**
  – to create a new user.
- **READ**
  – to view the list of users.
  – to view user details.
  – to download Developer configuration.
- **UPDATE**
  – to update/enable/disable/restore an existing user.
- **DELETE**
  – to delete an existing user.
- **ACTION**
  – backup permission for future usages.

Administration related

- **CREATE**
  – to create/upload a new control server configuration parameter (the user should have READ permission of Administration Context).
  – to update an existing control server configuration parameter using upload with Override existing keys (the user should have READ permission of Administration Context).
- **READ**
  – to navigate to Control Server Configuration module.
  – to download control server configuration parameters.

– to navigate to Activity Log module and view the activity log history (the user should have READ permission of an appropriate module to view current record state).
– to view and manage Control Server Logs.
– to view current info for an existing license.

- **UPDATE**
  – to update an existing control server configuration parameter using right-side panel (the user should have READ permission of Administration Context).
  – to upload a license.
  – to update an existing license.
- **DELETE**
  – to delete an existing control server configuration parameter (the user should have READ permission of Administration Context).
- **ACTION**
  – backup permission for future usages.

SecretVault related

- **CREATE**
  – to create/upload a new secret vault entry.
  – to update an existing secret vault entry using upload with Override existing keys.
- **READ**
  – to view the list of secret vault entries.
- **UPDATE**
  – to update an existing secret vault entry using right-side panel.
- **DELETE**
  – to delete an existing secret vault entry.
- **ACTION**
  – backup permission for future usages.

Channel related

- **CREATE**
  – to create a new channel.
- **READ**
  – to view the list of channels.
- **UPDATE**
  – to update an existing channel.
- **DELETE**
  – to delete an existing channel.
- **ACTION**
  – backup permission for future usages.

Template related

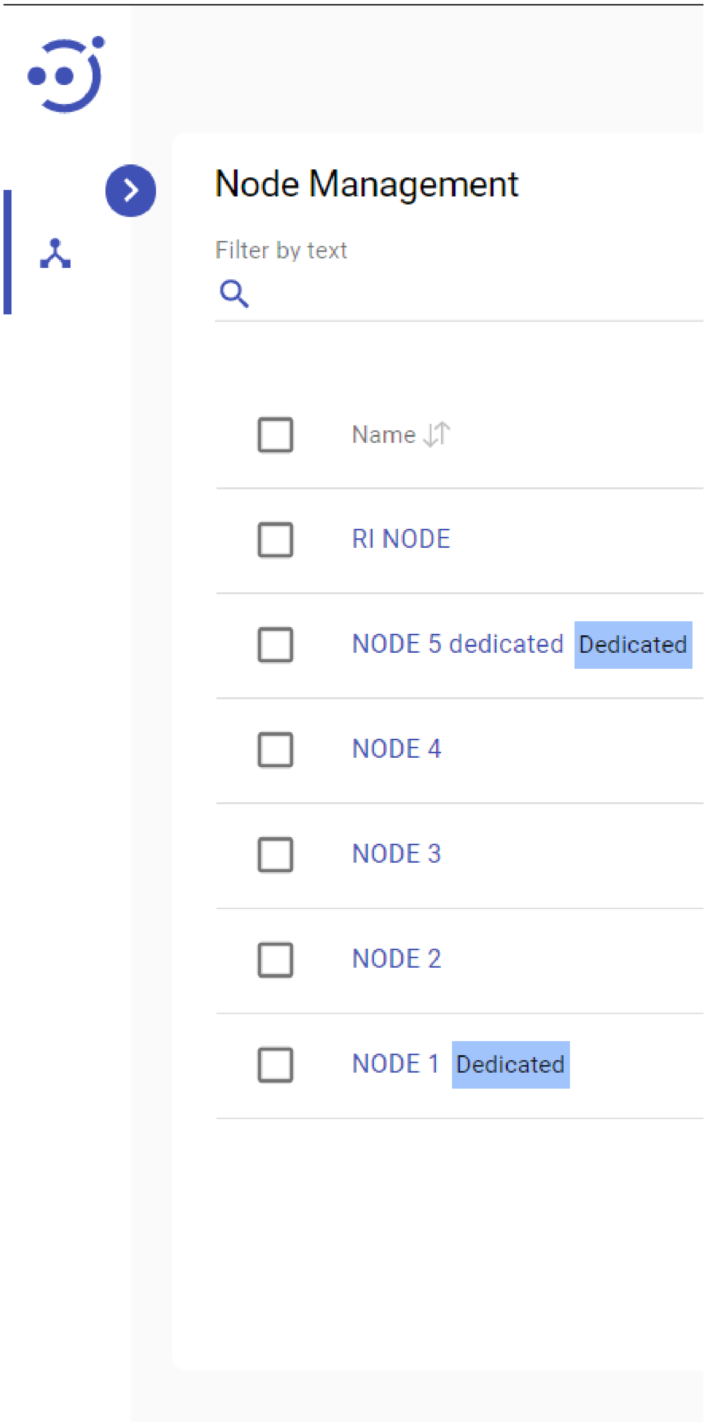
- **CREATE**
  – to create a new template.
  – to validate the template being created.
- **READ**
  – to view the list of templates.
  – to validate an existing template.
- **UPDATE**
  – to update an existing template.
- **DELETE**
  – to delete an existing template.
- **ACTION**
  – backup permission for future usages.

Permission Restrictions

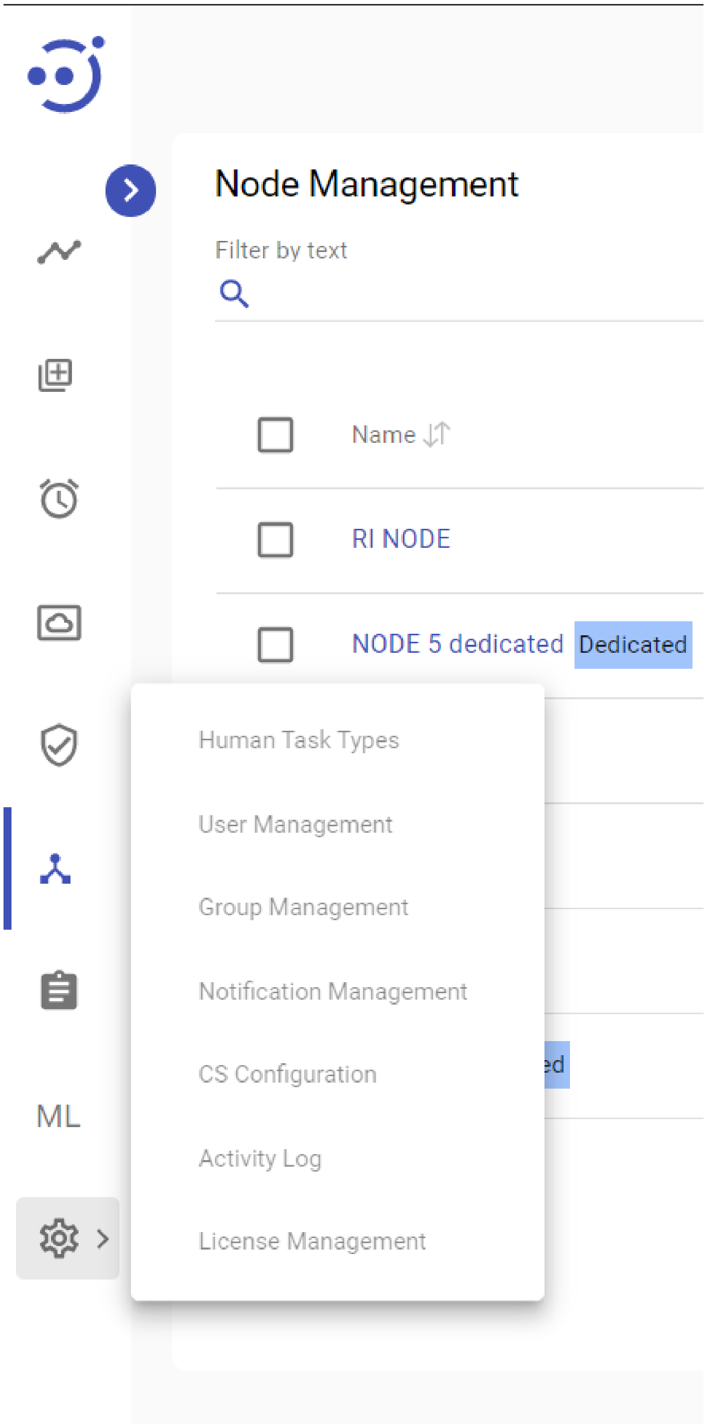
When a user has a Role without appropriate Permissions, the following restrictions can be applied to the user interface:

Main menu items are not displayed

- Restricted Permissions:

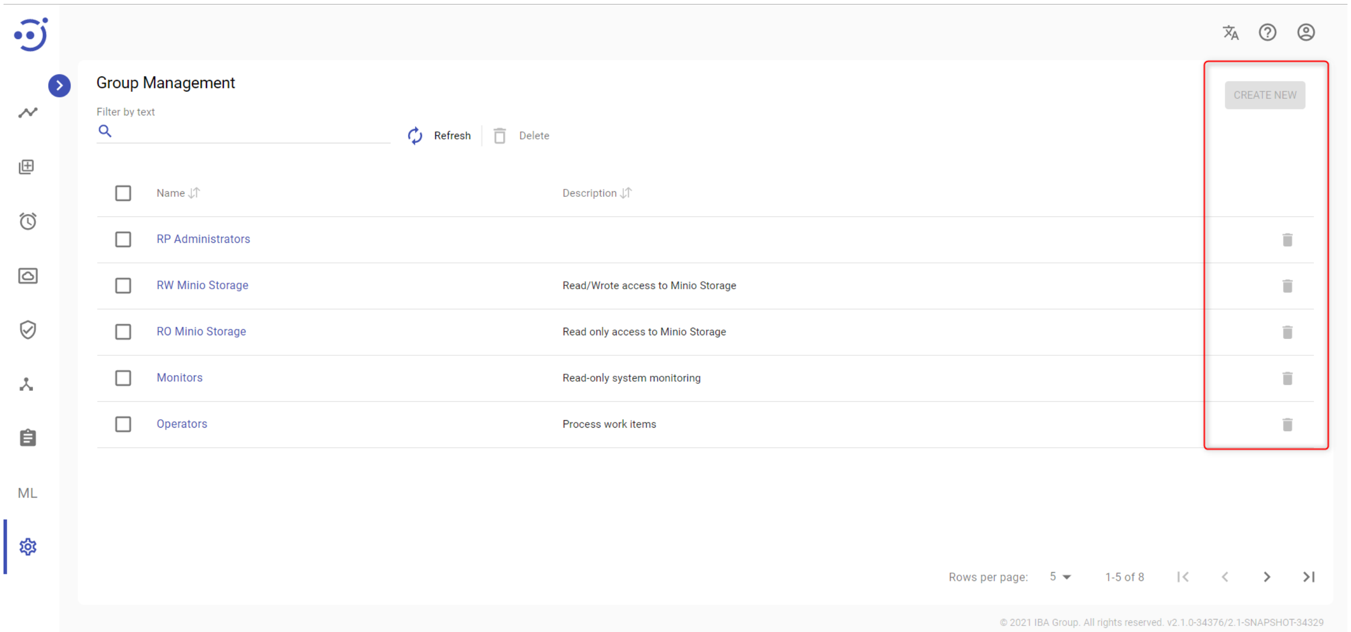


- All Permissions:

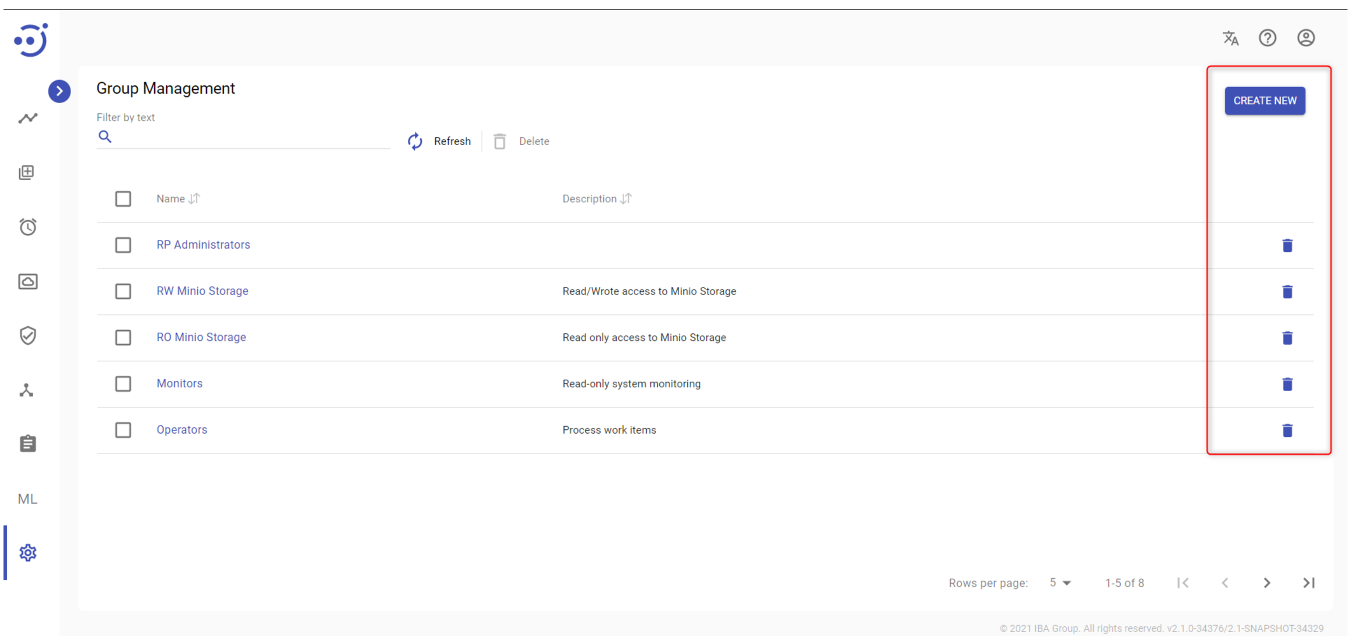


Action buttons are disabled

- Restricted Permissions:



- All Permissions:



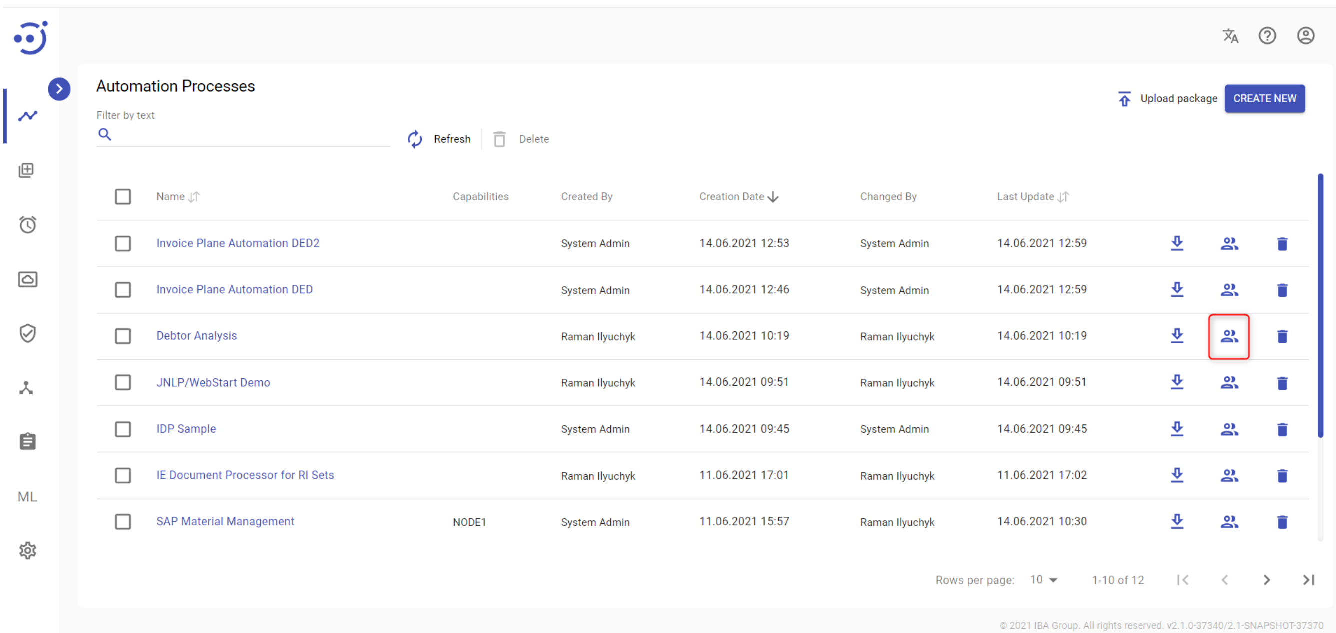
(v. 2.2) Security Access

- Create a new Group for an entity
- Add an entity to a Group
- View/Edit a Group

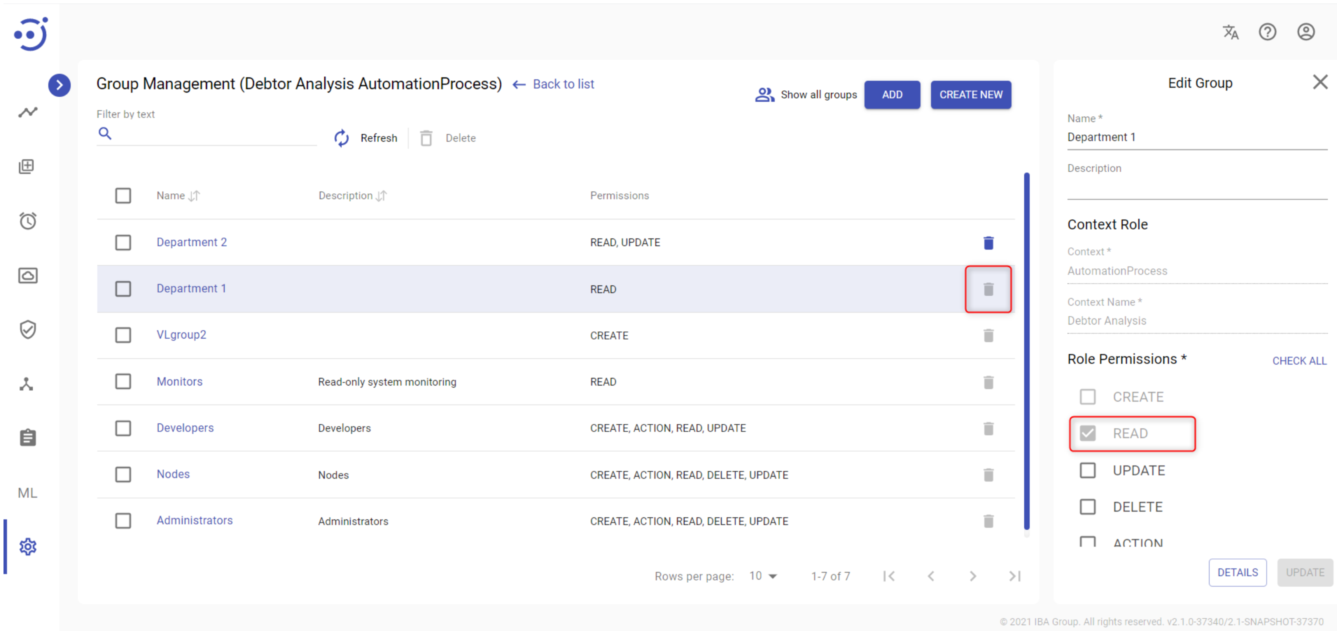
To view the list of groups (and roles) for the corresponding entity using Security Access, you need to be granted Group-READ permission. See (v. 2.2) Role Permissions.

To manage a group for a specific entity, click Security Access icon in the table row in of the following modules:

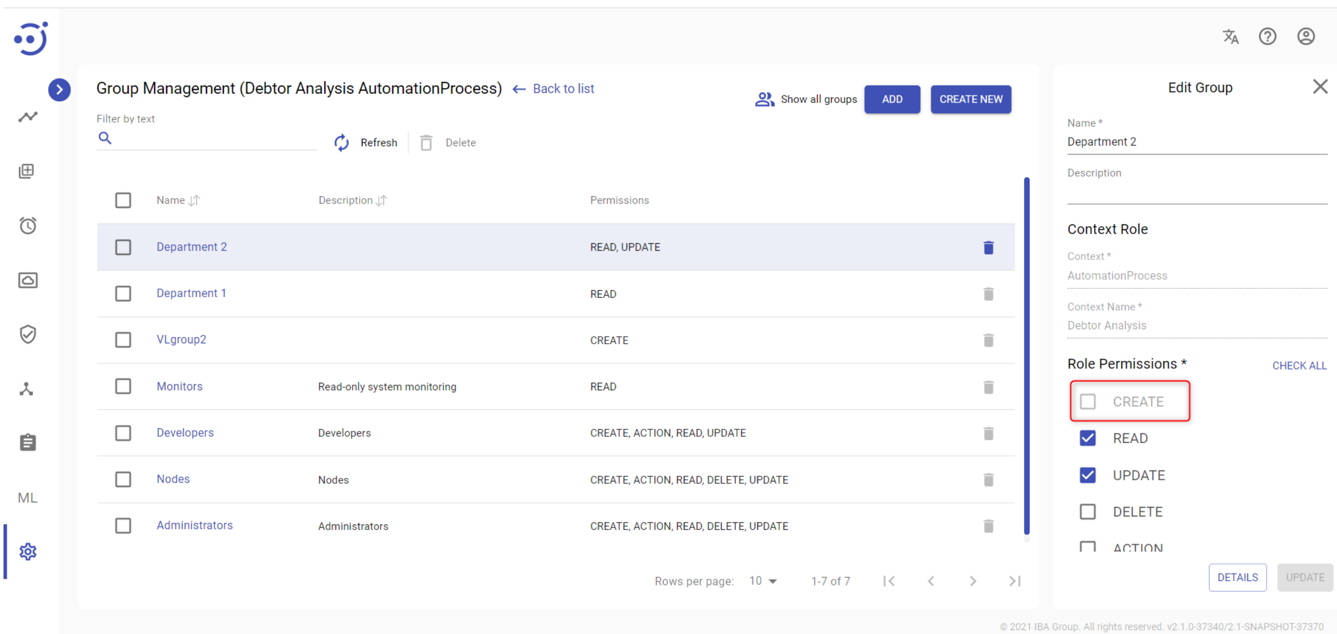
- (v. 2.2) Automation Processes
- (v. 2.2) Schedules
- (v. 2.2) Data Stores
- (v. 2.2) Secret Vault
- (v. 2.2) Node Management
- (v. 2.2) Document Sets
- (v. 2.2) Models
- (v. 2.2) Human Task Types
- (v. 2.2) Document Types
- (v. 2.2) User Management
- Channels
- Templates



⚠ **Groups that already have a Context Role with ALL Context Name (see View/Edit Roles in a Group) for the module are displayed and cannot be deleted for the entity. If a Group has a Context Role with ALL Context Name for the module and a permission, the permission is already granted for the entity.**

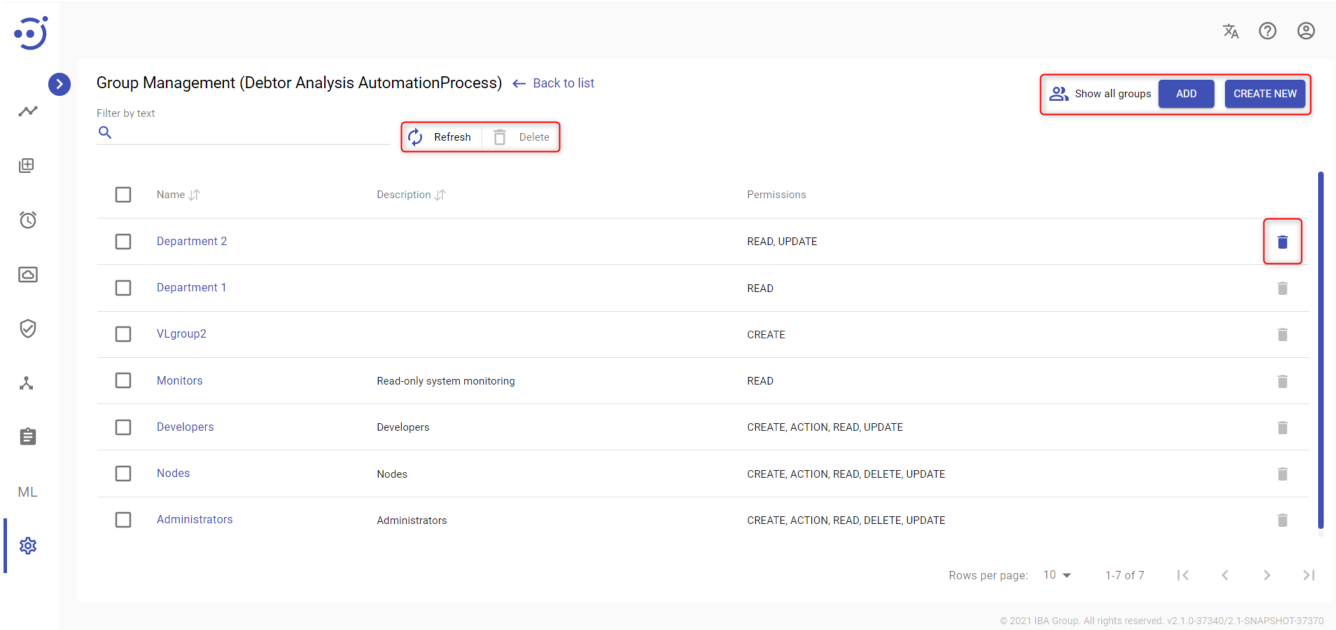


⚠ **CREATE permission only applies in ALL scope (see [(v. 2.2) Role Permissions](#)). CREATE permission cannot be used to create a new Group for an entity (see Create a new Group for an entity) or edit an existing Group (see A dd an entity to a Group and View/Edit a Group).**



Control Icons

- **Show all groups** - to show all groups.
- **ADD** - to add an entity role to an existing group. See Add an entity to a Group
- **CREATE NEW** - to create a new group for the entity. See Create a new Group for an entity
- **Refresh** - to pull the last updates from the server via Refresh icon.
- **Delete** - to delete the selected group (via the recycle bin control icon in the table row or Delete icon above the table).



Filter by text

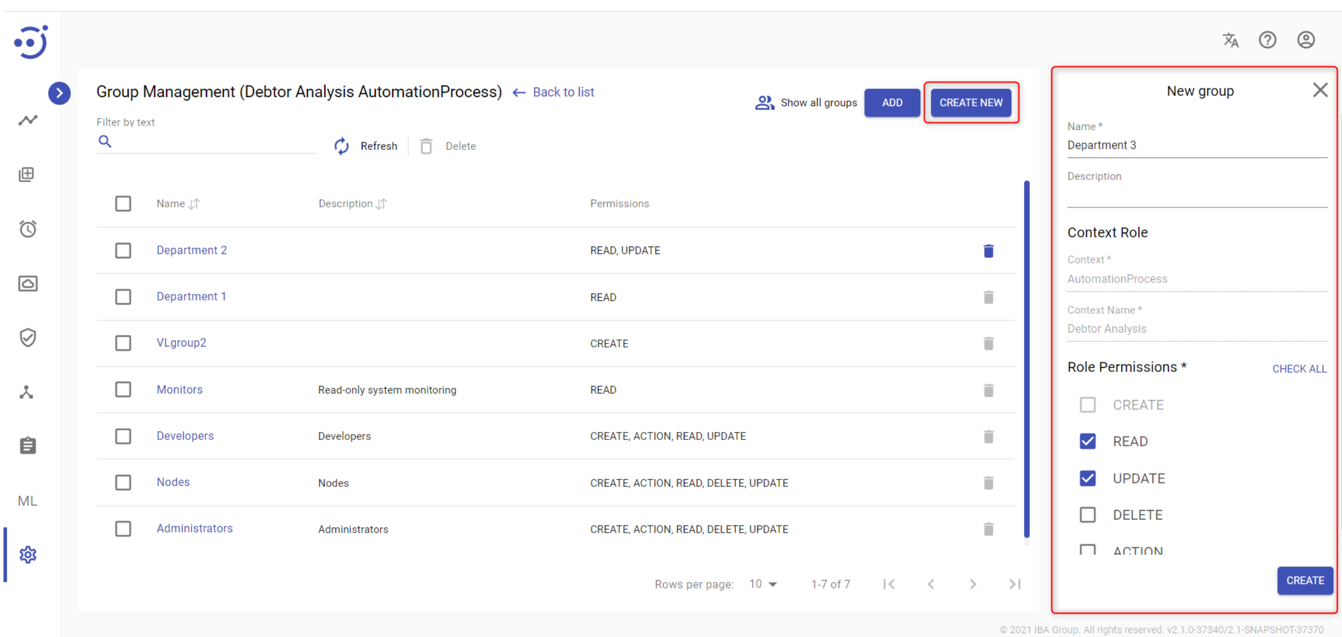
Filtering allows you to search the group by the columns: Name, Description.

Sorting

Ascending/descending sorting is allowed by the columns: Name, Description.

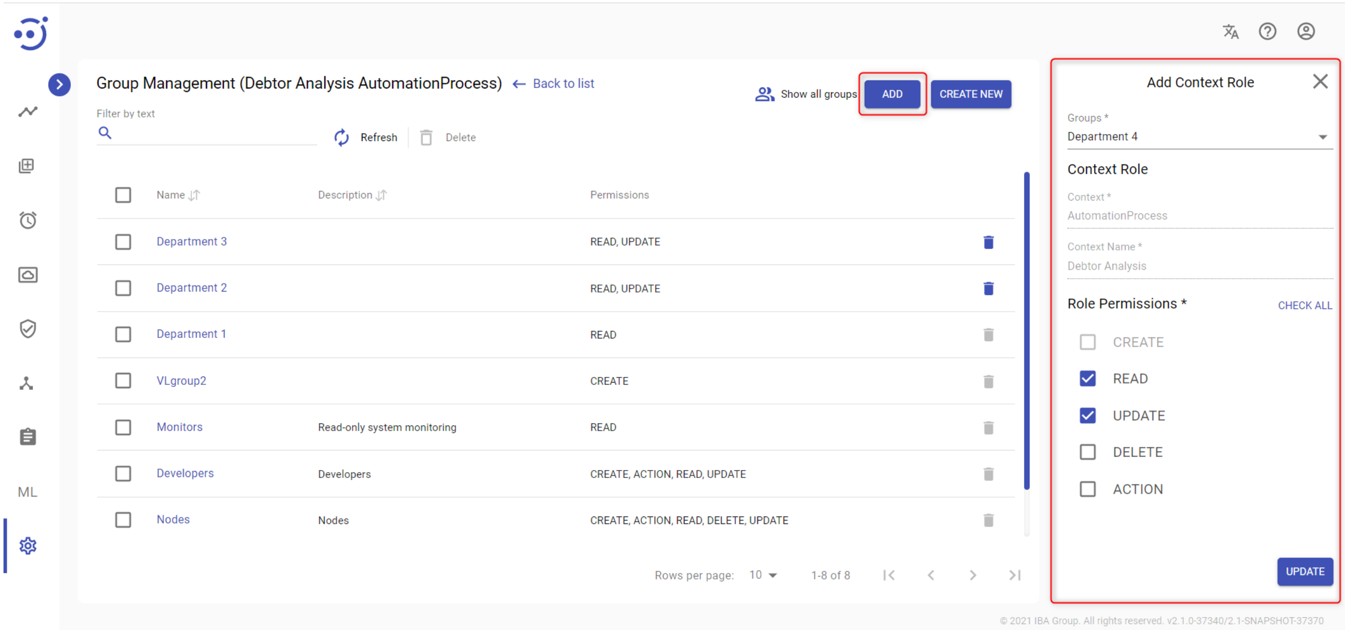
Create a new Group for an entity

To create a new Group for an entity, click **CREATE NEW**, fill in the required fields on the New group right-side panel and click **CREATE**. R equired Permissions: Group-READ,CREATE. See (v. 2.2) Role Permissions.



Add an entity to a Group

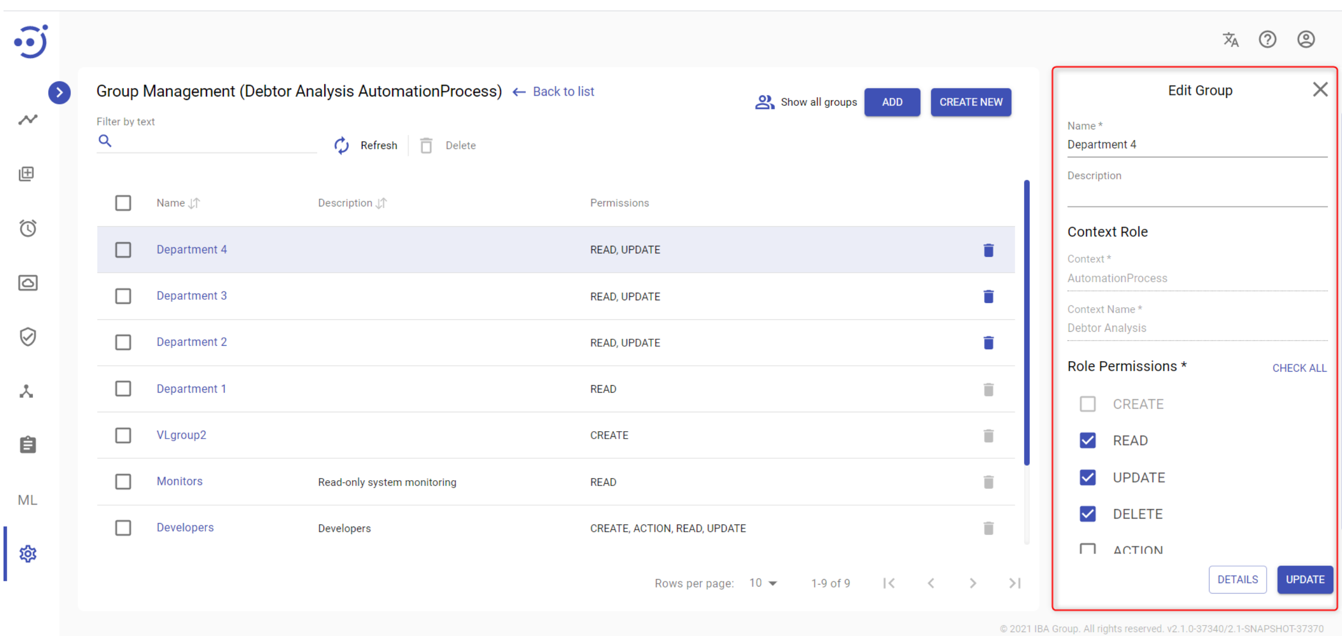
To add an entity to an existing Group, click **ADD**, fill in the required fields on the Add Context Role right-side panel and click **UPDATE**. Required Permissions: Group-READ,UPDATE. See (v. 2.2) Role Permissions.



⚠ **Groups list contains only groups that do not have a granted role for the entity (or ALL Context Name for the module).**

View/Edit a Group

To view or edit an existing group with the corresponding Context Role, click the corresponding group row, make changes on the Edit Group right-side panel, and click **UPDATE**. Required Permissions: Group-READ,UPDATE. See (v. 2.2) Role Permissions.



(v. 2.2) Notification Management

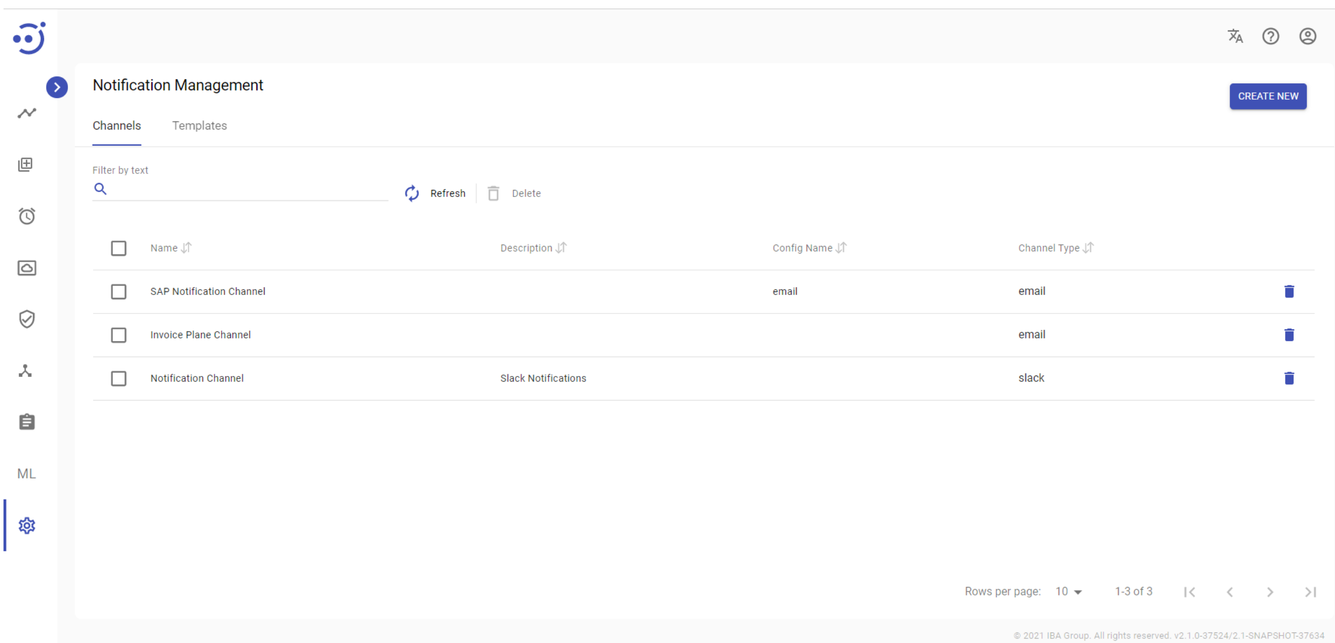
The Notification Management module allows users to set up channels and examples for receiving messages about Control server activities: Automation processes, Schedules, Nodes, and Human tasks.

You can access the module by clicking **Administration Notification Management**. Required Permission: Channel-READ and Template-READ. See (v. 2.2) Role Permissions.

Channels

Channels allows configuring the address of the final recipient of the notifications. You are able to set notifications for email and slack (see **Notification Service**).

Also to receive results of some Automation processes (for example, Debtor Analysis, SAP Material Management) you need to add channels with the name that are specified in the Automation process configuration parameters. Option sending results is configured by developers; the templates are included in the AP package and loaded with upload button in Automation Process module.



Columns Description:

- **Name** - the template name.
- **Description** - a short description of the template.
- **Config Name** - specify additional parameters to configure multiple channels for the notifications.
  ⚠For config name must be specified settings in CS configuration and *notification.channels.config.* See **Notification Service**.
- **Channel Type** - define, where to send notifications: email or slack.

Filter by text

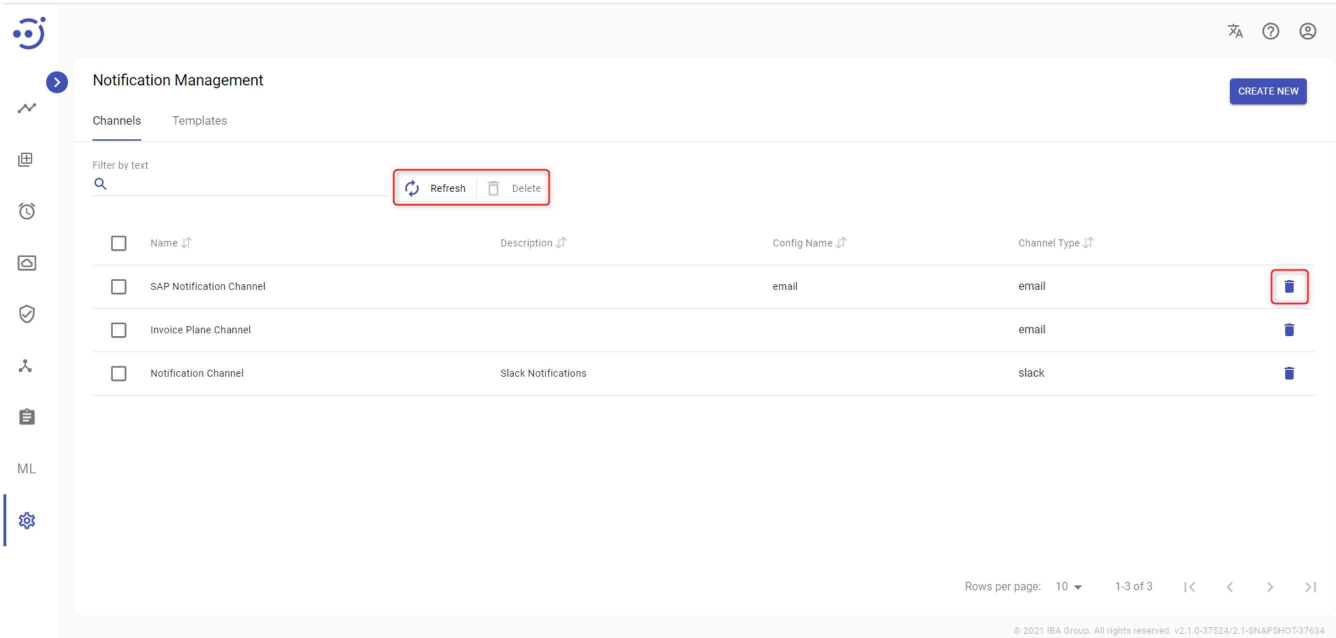
Filtering allows you to search the channel by the columns: Name, Description, Channel Type**.**

Sorting

Ascending/descending sorting is allowed for the columns: Name, Description, Config Name, Channel Type.

Control icons

- **Refresh** - to refresh the page.
- **Delete** an existing channel via the recycle bin control icon in the table row or Delete icon above the table. Required Permission: Channel-DELETE. See (v. 2.2) Role Permissions.

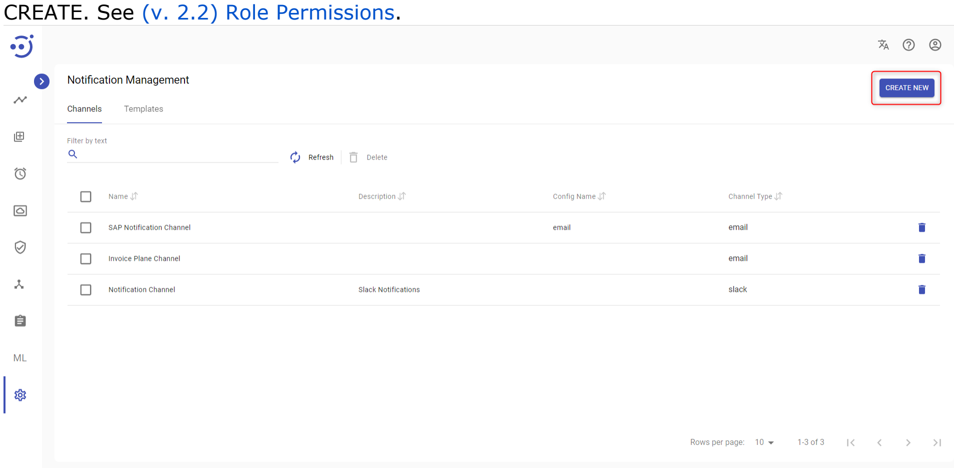


⚠️ Channel can't be deleted if it's used in any module.

Create a new channel

To create a channel:

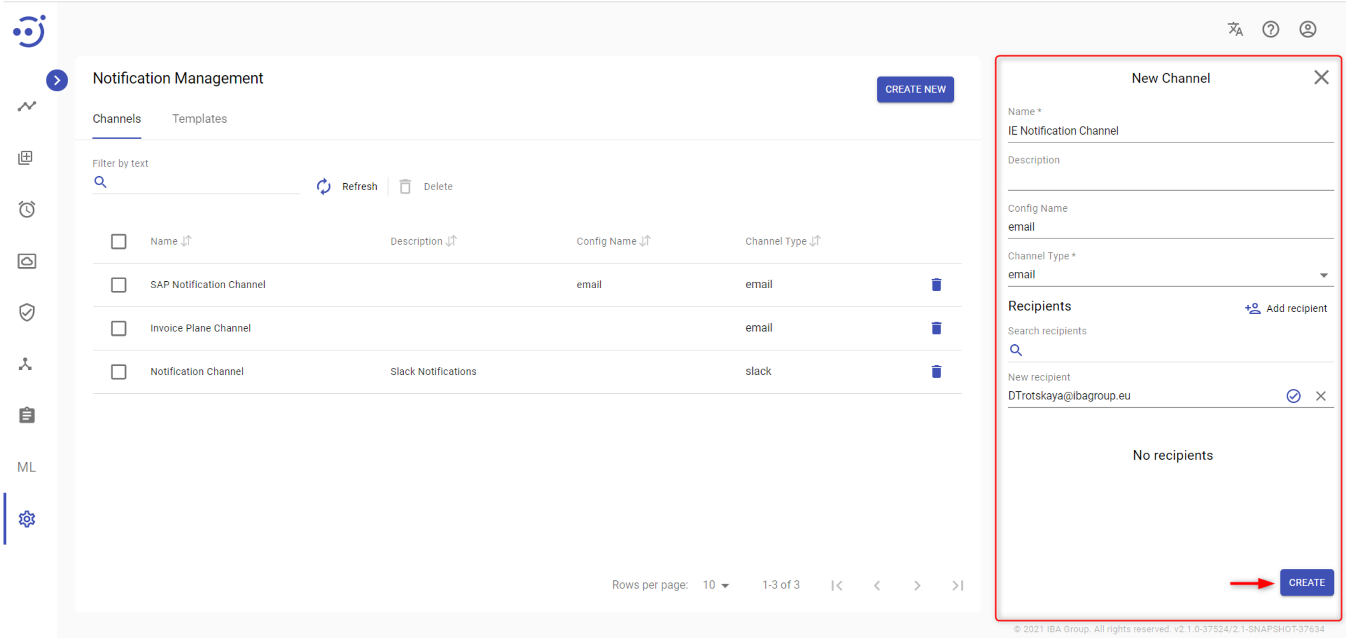
1. Go to the **Administration** **Notification Management** module **Channels** tab and click **CREATE NEW**. Required Permission: Channel-CREATE. See (v. 2.2) Role Permissions.



2. In the **New Channel** popup panel enter:
   - **Name**,
   - **Description** (optionally),
   - **Channel Type** - email or slack,
   - **Recipients** - if Channel Type is email, emails should be from the host added to the Control Server Configuration; if Channel Type is slack, you should add slack channel ID to the Recipients and check that token is added to the Control Server Configuration. See **Notification Service**.

- **Config Name** (optionally).

3. Click **CREATE**.



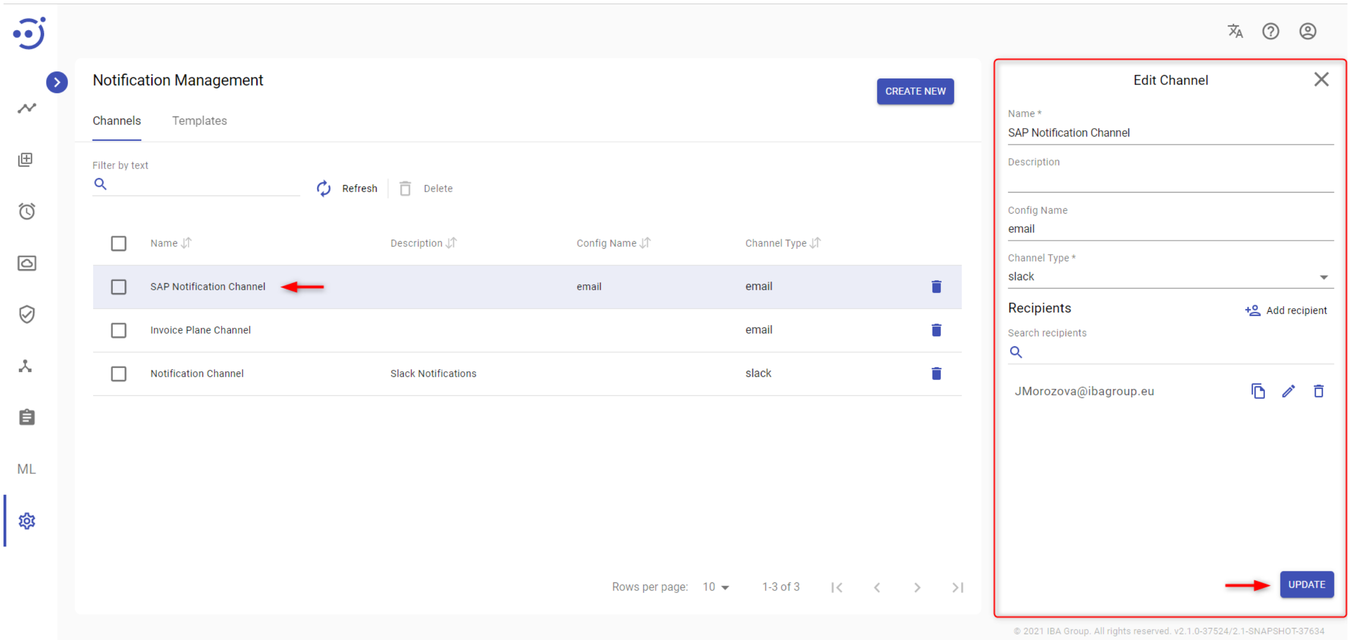
Edit an existing channel

To edit a channel:

1. Go to the **Administration** **Notification Management** module **Channels** tab and click record with created Channel. Required Permission: Channel-UPDATE. See (v. 2.2) Role Permissions.
2. In the **Edit Channel** popup panel change:

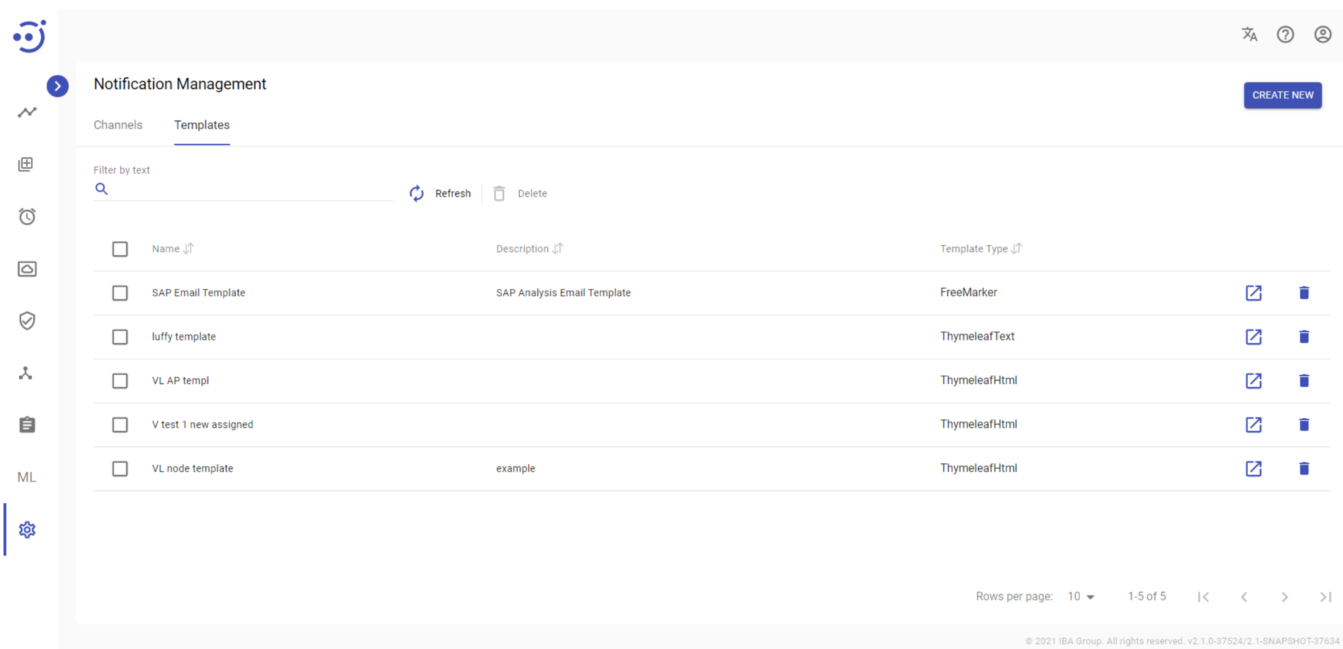
   - **Name**,
   - **Description** (optionally),
   - **Channel Type** - email or slack,
   - **Recipients** - if Channel Type is email, emails should be specified in domain company according to *notification.channels.config* in the Control Server Configuration; if Channel Type is slack, you should add slack channel ID to the Recipients and check that token is added to the Control Server Configuration. See **Notification Service**.
   - **Config Name** (optionally).

3. Click **UPDATE**.



Templates

User is able to design and validate a template containing the information that will be received in the notification. It is currently possible to receive a notification about the **Automation Process, Node, Document Type, or Schedule.**



Columns Description:

- **Name** - the template name.
- **Description** - a short description of the template.
- **Template Type** - a template writing format.

Filter by text

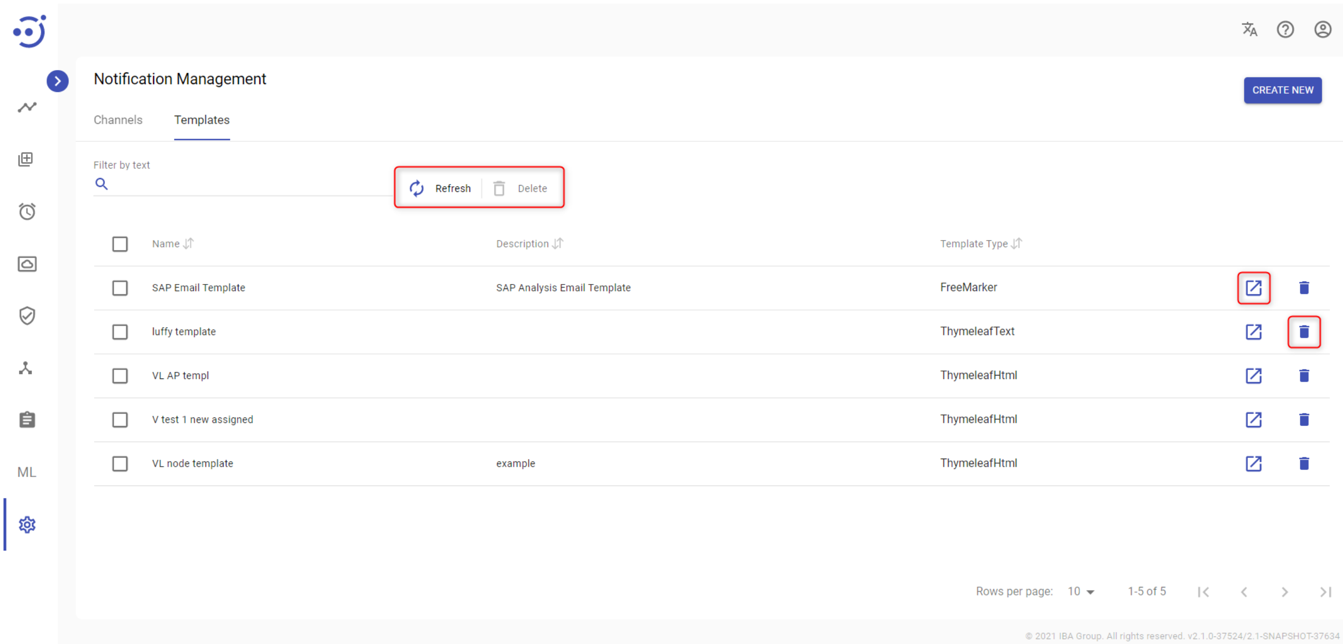
Filtering allows you to search the template by the columns: Name, Description, Template Type.

Sorting

Ascending/descending sorting is allowed for the columns: Name, Description, Template Type.

Control icons

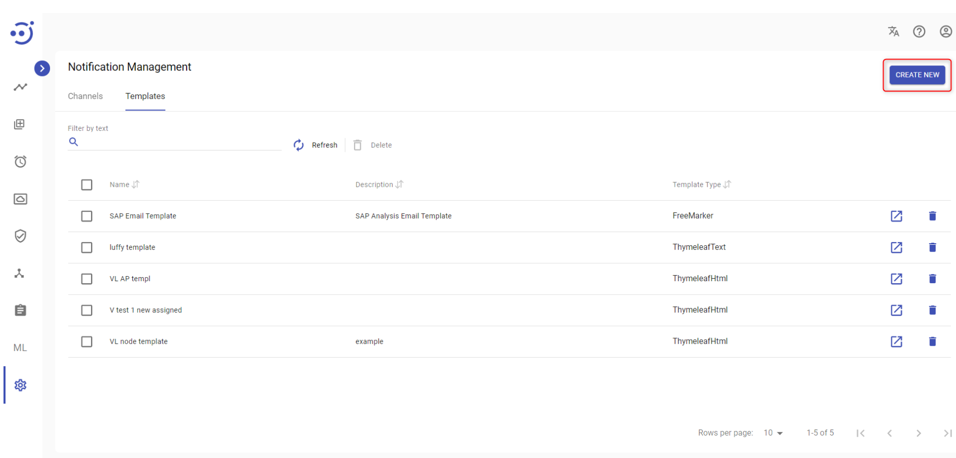
- **Refresh** - to refresh the page.
- **Delete** an existing template via the recycle bin control icon in the table row or Delete icon above the table. Required Permission: Template-DELETE. See (v. 2.2) Role Permissions.
- **Open template details** of a current template via icon in the table row.



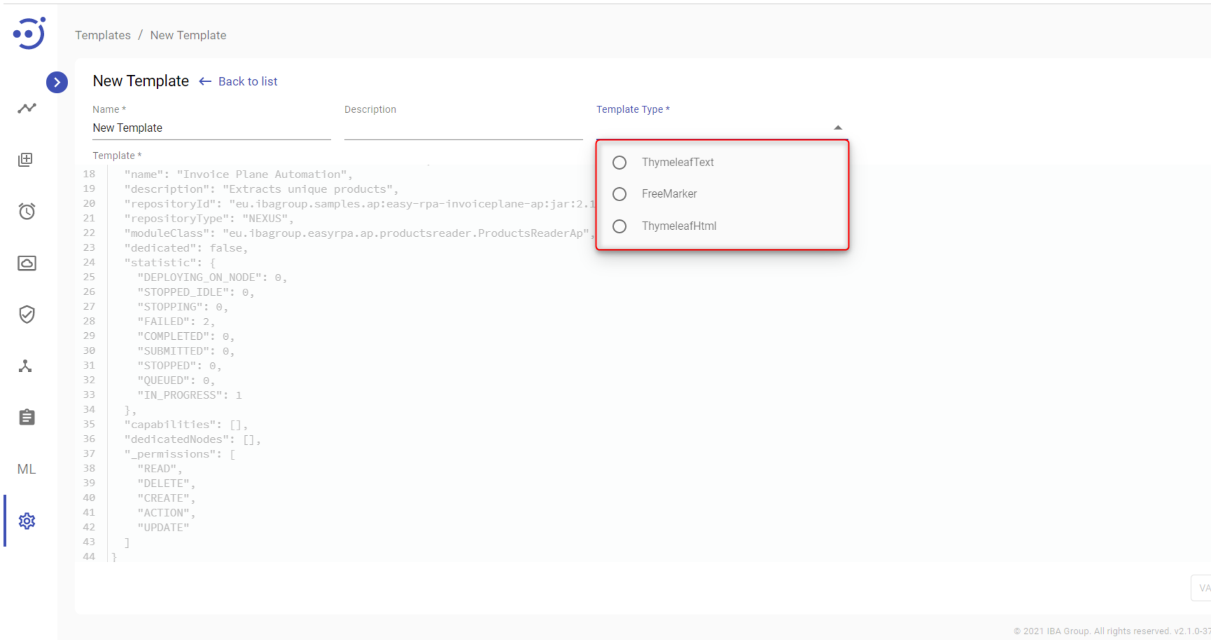
Create a new template

To create a template:

1. Go to the **Administration Notification Management** module **Templates** tab and click **CREATE NEW**. Required Permission: Template-CREATE. See (v. 2.2) Role Permissions.



2. In the **New Template** page:
   - Enter **Name, Description** (optionally),
   - Choose **Template Type** - ThymeleafText, FreeMarker, or ThymeleafHtml



- make **Template** according to selected Template Type

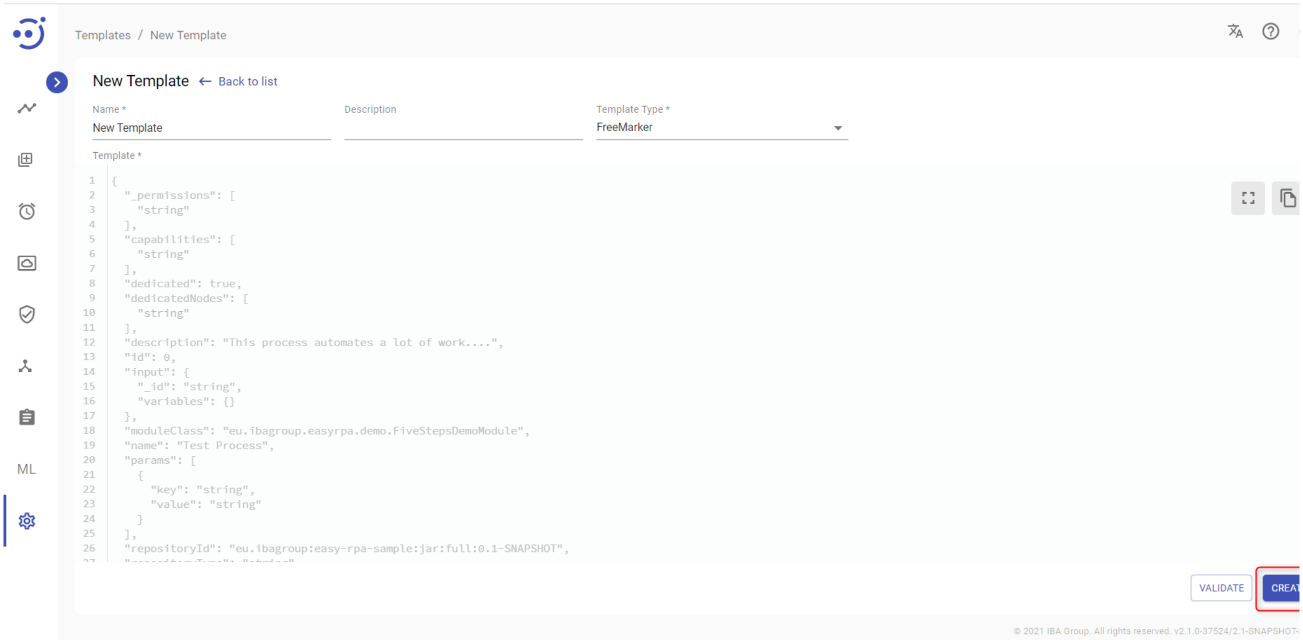
  - ThymeleafHtml - allows to make a template using HTML standard, including HTML5, HTML 4, and XHTML. Validation is not performed, and the code/structure of the original template will be followed to the maximum extent possible. Note, that for slack channel better to use other 2 template types.

  - ThymeleafText - allows to use a special syntax for templates without markup. Examples of such templates can be text messages or template documents. Note, that HTML or XML templates can also be processed as TEXT, in which case the markup is not parsed, and each tag, DOCTYPE, comment, and so on will be treated as plain text. Read more about template modes here. Also useful documentation about Thymeleaf dialect is here.

  - FreeMarker - template engine: a Java library for generating text output (HTML pages, xml, configuration files, source code, etc.). The input is a template, for example, html, which contains special expressions, prepares data corresponding to this expression, where Freemarker dynamically inserts this data and a dynamically filled document is obtained. Getting started manual is here.

  To check what information will be taken for your notification see the Validate template section below. At the end of the page are examples in ThymeleafText format.

4. Click **CREATE**.



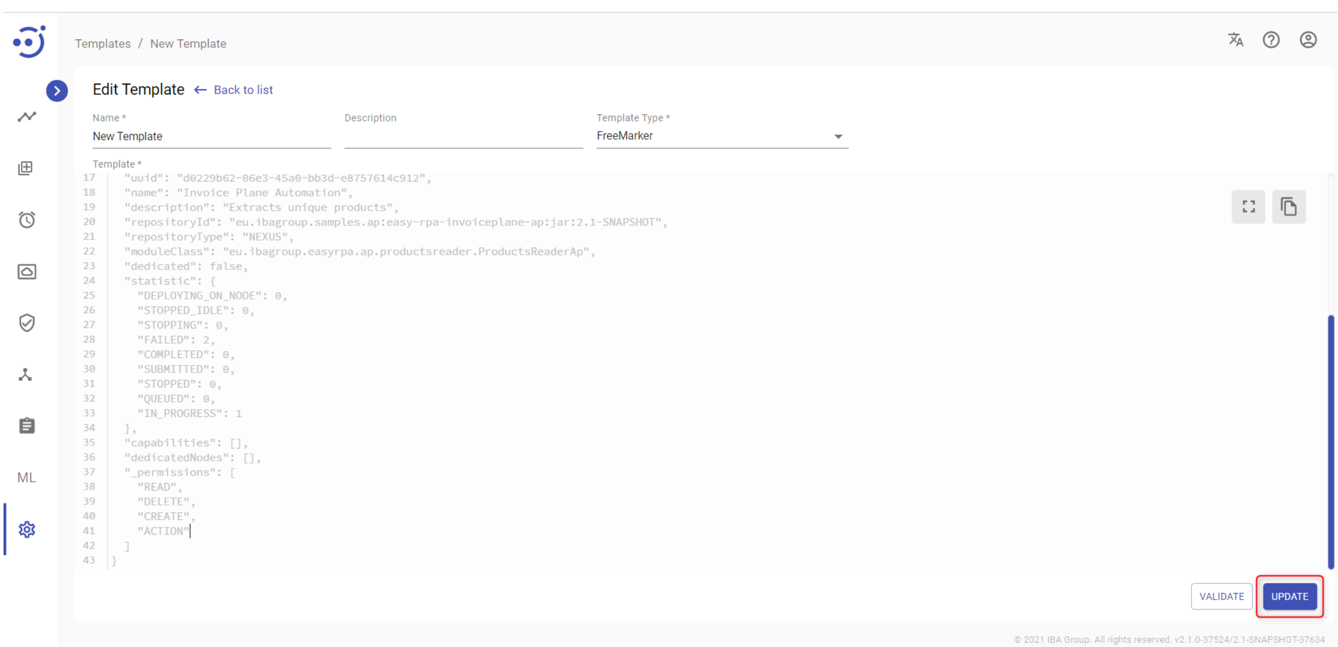
Edit an existing template

To edit a template:

1. Go to the **Administration Notification Management** module **Templates** tab and click the **Open Template Details** icon in the row. Required Permission: Template-UPDATE. See (v. 2.2) Role Permissions.
2. In the **Edit Template** page:

   - Edit **Name, Template Type and Template, Description** (optionally). See more details about Template Type and Template in the Create a new template section

3. Click **UPDATE**.

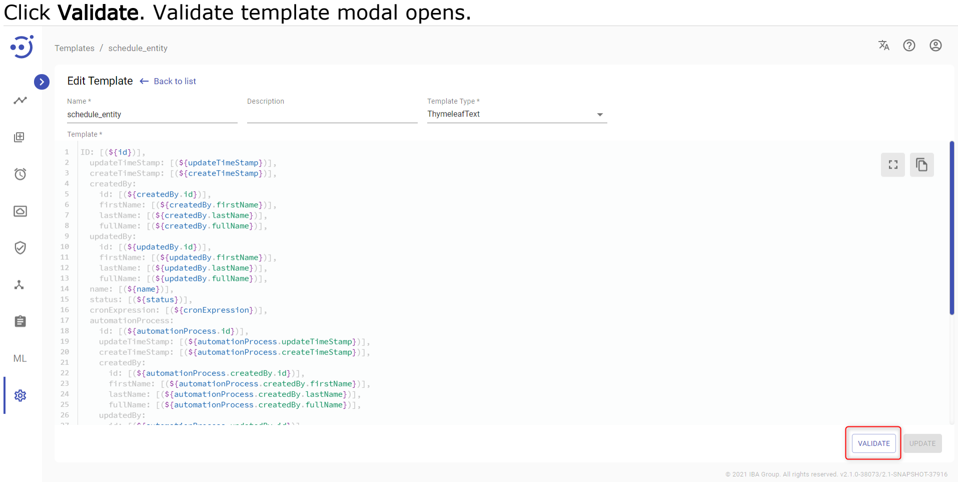


Validate template

This functionality allows user to validate created template, its format, see what information will be taken if you use special expressions. User can validate templates during developing or editing a template.

To validate template during creating or editing:

1. Go to the **Administration Notification Management** module **Templates** tab and click **CREATE NEW** button or open an existing template via **Open Template Details** icon in the row. Required Permission: Template-CREATE. See (v. 2.2) Role Permissions.
2. Click **Validate**. Validate template modal opens.



3. In the **Validate Entity** field select a module: Automation Process, Node, Document Type, or Schedule.
4. **Validation Settings** section contains response to the GET request in JSON format with information about selected Validate Entity. Note, real request and response can be different, required for check format and results created template according to information in the validate settings. If necessary, user can change Validation Settings. The changes made are saved, when you click **CLOSE.**
5. Click **VALIDATE**.

Examples of templates

- Automation Process

Automation Process Template Example

```
ID: [(${id})],
updateTimeStamp: [(${updateTimeStamp})],
createTimeStamp: [(${createTimeStamp})],
createdBy:
id: [(${createdBy.id})],
firstName: [(${createdBy.firstName})],
lastName: [(${createdBy.lastName})],
fullName: [(${createdBy.fullName})],
updatedBy:
id: [(${updatedBy.id})],
firstName: [(${updatedBy.firstName})],
lastName: [(${updatedBy.lastName})],
fullName: [(${updatedBy.fullName})],
uuid: [(${uuid})],
status: [(${status})],
runUuid: [(${runUuid})],
apUuid: [(${apUuid})],
automationProcess:
id: [(${automationProcess.id})],
updateTimeStamp: [(${automationProcess.updateTimeStamp})],
createTimeStamp: [(${automationProcess.createTimeStamp})],
createdBy:
id: [(${automationProcess.createdBy.id})],
firstName: [(${automationProcess.createdBy.firstName})],
lastName: [(${automationProcess.createdBy.lastName})],
fullName: [(${automationProcess.createdBy.fullName})],
updatedBy:
id: [(${automationProcess.updatedBy.id})],
firstName: [(${automationProcess.updatedBy.firstName})],
lastName: [(${automationProcess.updatedBy.lastName})],
fullName: [(${automationProcess.updatedBy.fullName})],,
uuid: [(${automationProcess.uuid})],
name: [(${automationProcess.name})],
description: [(${automationProcess.description})],
repositoryId: [(${automationProcess.repositoryId})],
moduleClass: [(${automationProcess.moduleClass})],
dedicated: [(${automationProcess.dedicated})],
statistic: [# th:if="${automationProcess.statistic.isEmpty()}"]—[/][# th:each="statistic : ${automationProcess.
statistic}" ]
[(${statistic.key})] - [(${statistic.value})][/]
capabilities: [# th:if="${#lists.isEmpty(automationProcess.capabilities)}"]—[/][# th:each="cap :
${automationProcess.capabilities}" ]
[(${cap})][/]
dedicatedNodes: [# th:if="${#lists.isEmpty(automationProcess.dedicatedNodes)}"]—[/][# th:each="node :
${automationProcess.dedicatedNodes}" ]
[(${node})][/]
```

- Schedule

Schedule Template Example

```
ID: [(${id})],
updateTimeStamp: [(${updateTimeStamp})],
createTimeStamp: [(${createTimeStamp})],
createdBy:
id: [(${createdBy.id})],
firstName: [(${createdBy.firstName})],
lastName: [(${createdBy.lastName})],
fullName: [(${createdBy.fullName})],
updatedBy:
id: [(${updatedBy.id})],
firstName: [(${updatedBy.firstName})],
lastName: [(${updatedBy.lastName})],
fullName: [(${updatedBy.fullName})],
name: [(${name})],
status: [(${status})],
cronExpression: [(${cronExpression})],
automationProcess:
```

```
id: [(${automationProcess.id})],
updateTimeStamp: [(${automationProcess.updateTimeStamp})],
createTimeStamp: [(${automationProcess.createTimeStamp})],
createdBy:
id: [(${automationProcess.createdBy.id})],
firstName: [(${automationProcess.createdBy.firstName})],
lastName: [(${automationProcess.createdBy.lastName})],
fullName: [(${automationProcess.createdBy.fullName})],
updatedBy:
id: [(${automationProcess.updatedBy.id})],
firstName: [(${automationProcess.updatedBy.firstName})],
lastName: [(${automationProcess.updatedBy.lastName})],
fullName: [(${automationProcess.updatedBy.fullName})],,
uuid: [(${automationProcess.uuid})],
name: [(${automationProcess.name})],
description: [(${automationProcess.description})],
repositoryId: [(${automationProcess.repositoryId})],
repositoryType: [(${automationProcess.repositoryType})],
moduleClass: [(${automationProcess.moduleClass})],
dedicated: [(${automationProcess.dedicated})],
statistic: [# th:if="${automationProcess.statistic.isEmpty()}"]—[/] [# th:each="statistic : ${automationProcess.
statistic}" ]
[(${statistic.key})] - [(${statistic.value})][/]
capabilities: [# th:if="${#lists.isEmpty(automationProcess.capabilities)}"]—[/] [# th:each="cap :
${automationProcess.capabilities}" ]
[(${cap})][/]
dedicatedNodes: [# th:if="${#lists.isEmpty(automationProcess.dedicatedNodes)}"]—[/] [# th:each="node :
${automationProcess.dedicatedNodes}" ]
[(${node})][/]
startDate: [(${startDate})],
endDate: [(${endDate})]
```

- Node

Node Template Example

```
ID: [(${id})],
updateTimeStamp: [(${updateTimeStamp})],
createTimeStamp: [(${createTimeStamp})],
createdBy:
id: [(${createdBy.id})],
firstName: [(${createdBy.firstName})],
lastName: [(${createdBy.lastName})],
fullName: [(${createdBy.fullName})],
updatedBy:
id: [(${updatedBy.id})],
firstName: [(${updatedBy.firstName})],
lastName: [(${updatedBy.lastName})],
fullName: [(${updatedBy.fullName})],
name: [(${name})],
description: [(${description})],
status: [(${status})],
workDir: [(${workDir})],
dedicated: [(${dedicated})],
capabilities: [# th:if="${#lists.isEmpty(capabilities)}"]—[/][# th:each="cap : ${capabilities}" ]
[(${cap})][/]
details:
address: [# th:if="${#lists.isEmpty(details.address)}"]—[/][# th:each="addr : ${details.address}" ]
[(${addr})][/]
totalMemory: [(${details.totalMemory})],
freeMemory: [(${details.freeMemory})],
cpu: [(${details.cpu})],
version:
version: [(${details.version.version})],
build: [(${details.version.build})],
sha: [(${details.version.sha})]
features: [# th:each="feature : ${details.features}" ]
type: [(${feature.type})]
enabled: [(${feature.enabled})]
```

```
status: [(${feature.status})]
healthy: [(${feature.healthy})]
details: [# th:if="${feature.details.isEmpty()}"]—[/][# th:each="detail : ${feature.details}" ]
[(${detail.key})] - [(${detail.value})][/][/]
last_seen: [(${last_seen})]
```

- DocType

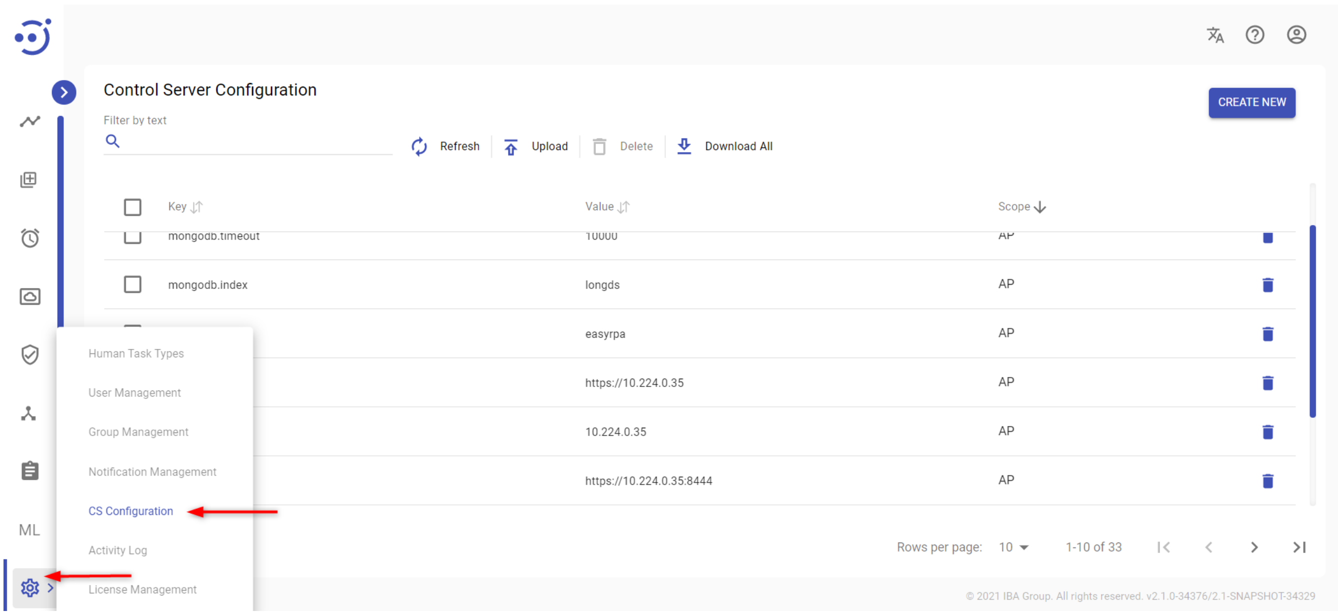
DocType Template Example

```
ID: [(${id})],
updateTimeStamp: [(${updateTimeStamp})],
createTimeStamp: [(${createTimeStamp})],
updatedBy:
id: [(${updatedBy.id})],
firstName: [(${updatedBy.firstName})],
lastName: [(${updatedBy.lastName})],
fullName: [(${updatedBy.fullName})],
uuid: [(${uuid})],
name: [(${name})],
description: [(${description})],
documentType:
id: [(${documentType.id})],
updateTimeStamp: [(${documentType.updateTimeStamp})],
createTimeStamp: [(${documentType.createTimeStamp})],
createdBy:
id: [(${documentType.createdBy.id})],
firstName: [(${documentType.createdBy.firstName})],
lastName: [(${documentType.createdBy.lastName})],
fullName: [(${documentType.createdBy.fullName})],
updatedBy:
id: [(${documentType.updatedBy.id})],
firstName: [(${documentType.updatedBy.firstName})],
lastName: [(${documentType.updatedBy.lastName})],
fullName: [(${documentType.updatedBy.fullName})],
httId: [(${documentType.httId})],
name: [(${documentType.name})],
description: [(${documentType.description})],
settings: [# th:each="setting : ${documentType.settings}" ]
[(${setting.key})] - [(${setting.value})][/]
status: [(${status})],
priority: [(${priority})],
httId: [(${httId})],
inputJson: [# th:if="${inputJson.isEmpty()}"]—[/][# th:each="param : ${inputJson}" ]
[(${param.key})] - [(${param.value})][/]
outputJson: [# th:if="${outputJson.isEmpty()}"]—[/][# th:each="param : ${outputJson}" ]
[(${param.key})] - [(${param.value})][/]
```

(v. 2.2) Control Server Configuration

The Control Server Configuration module displays a catalog of system configuration parameters and allows the user to manage them.

You can access the module by clicking **Administration CS Configuration**. To access the CS Configuration module, you need to be granted Administration-READ permission. See Role Permissions .



EasyRPA Control Server allows to perform the following actions:

- **Create** a new CS Configuration Parameter. Required permission: Administration-CREATE + Administration-READ.
- **Edit** an existing CS Configuration Parameter. Required permission: Administration-CREATE + Administration-READ.
- **Download** existing CS Configuration Parameters in CSV file. Required permission: Administration-READ.
- **Upload** CS Configuration Parameters in CSV file. Required permission: Administration-CREATE + Administration-READ.
- **Delete** an existing CS Configuration Parameter. Required permission: Administration-DELETE + Administration-READ.

Filter by text

Filtering allows you to search the CS Configuration Parameter by all columns.

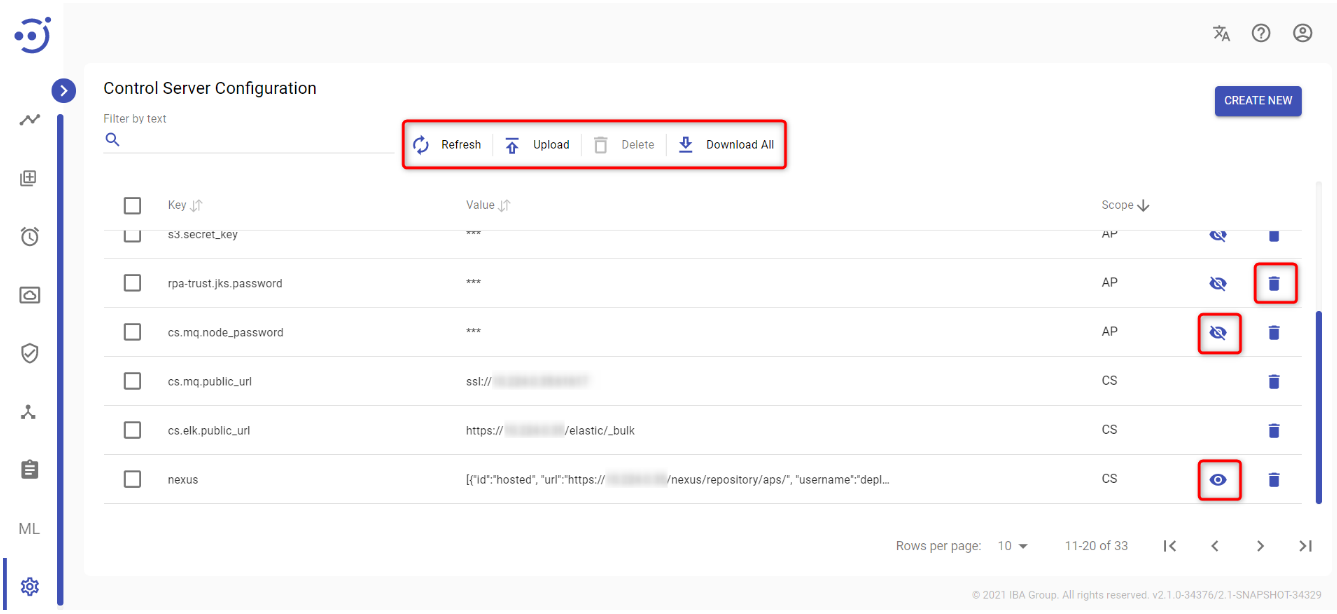
⚠️ Filtering does not allow you to search the CS Configuration Parameter with **Secret value** by the Value column.

Sorting

Ascending/descending sorting is allowed for all columns.

Control icons

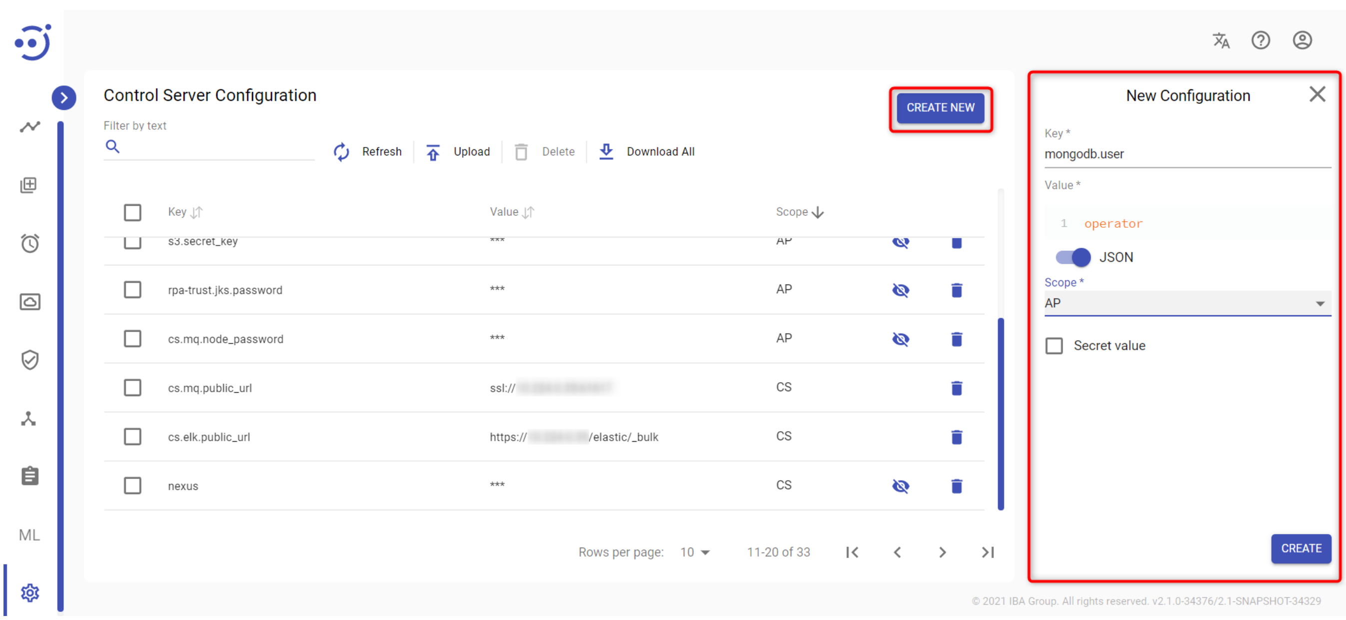
- **Refresh** - to pull the last updates from the server.
- **Upload** - to upload CS Configuration Parameters in CSV file. Required permission: Administration-CREATE + Administration-READ.
- **Delete** - to delete the CS Configuration Parameter (via the recycle bin control icon in the table row or Delete icon above the table). Required Permission: Administration-DELETE + Administration-READ.
- **Download All** - to download existing CS Configuration Parameters in CSV file. Required permission: Administration-READ.
- **Show setting** - to show the Value for the CS Configuration Parameter with Secret value.
- **Hide setting** - to hide the Value for the CS Configuration Parameter with Secret value.



Create a New CS Configuration Parameter

To create a CS Configuration Parameter:

- Click **CREATE NEW**.
- On the **New Configuration** popup panel:
    - Enter a unique **Key** to distinguish the Configuration Parameter.
    - Enter the **Value** of the Configuration Parameter.
    - Choose the **Scope** from the dropdown list (AP - for Automation Process level, CS - for Control Server level).
    - Tick **Secret value**, if the Value should be hidden.
- Click **CREATE**.



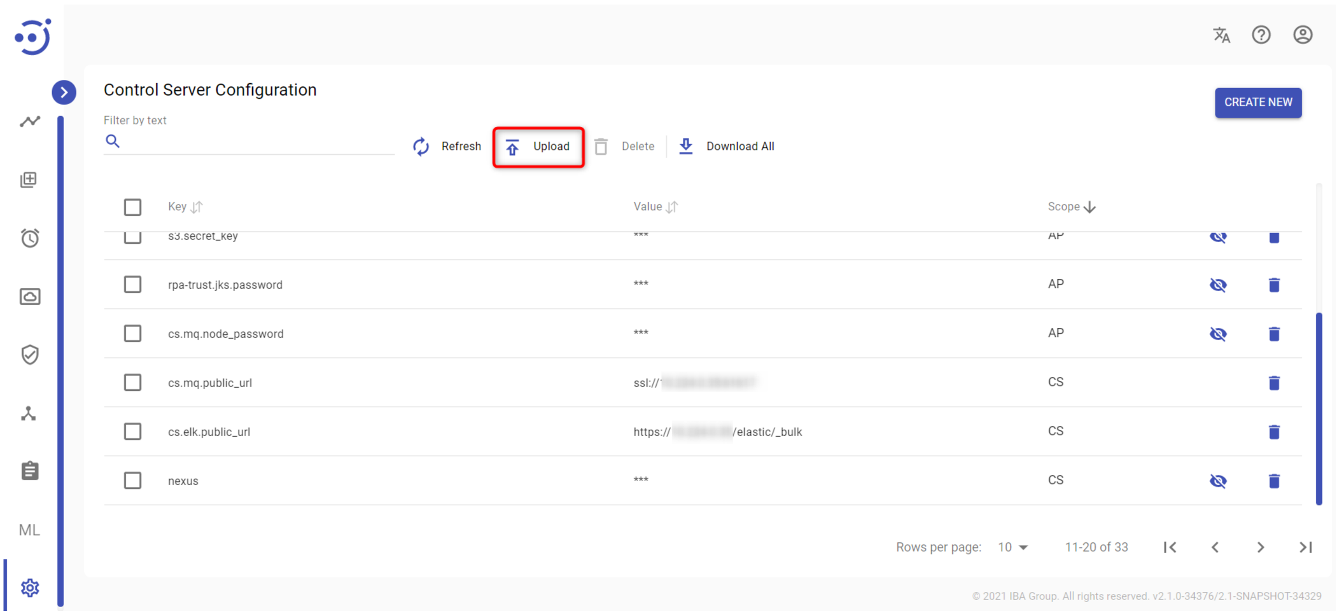
⚠️ Parameters with the scope "AP" can also be added to the Automation Process and Node Configuration Parameters modules. If all three modules have the same parameter with different values, priority is given to Node Configuration Parameter, then Automation Process, and the last CS Configuration Parameter.

To create the CS Configuration Parameter, you need to be granted Administration-CREATE permission (with Administration-READ). See (v. 2.2) Role Permissions.

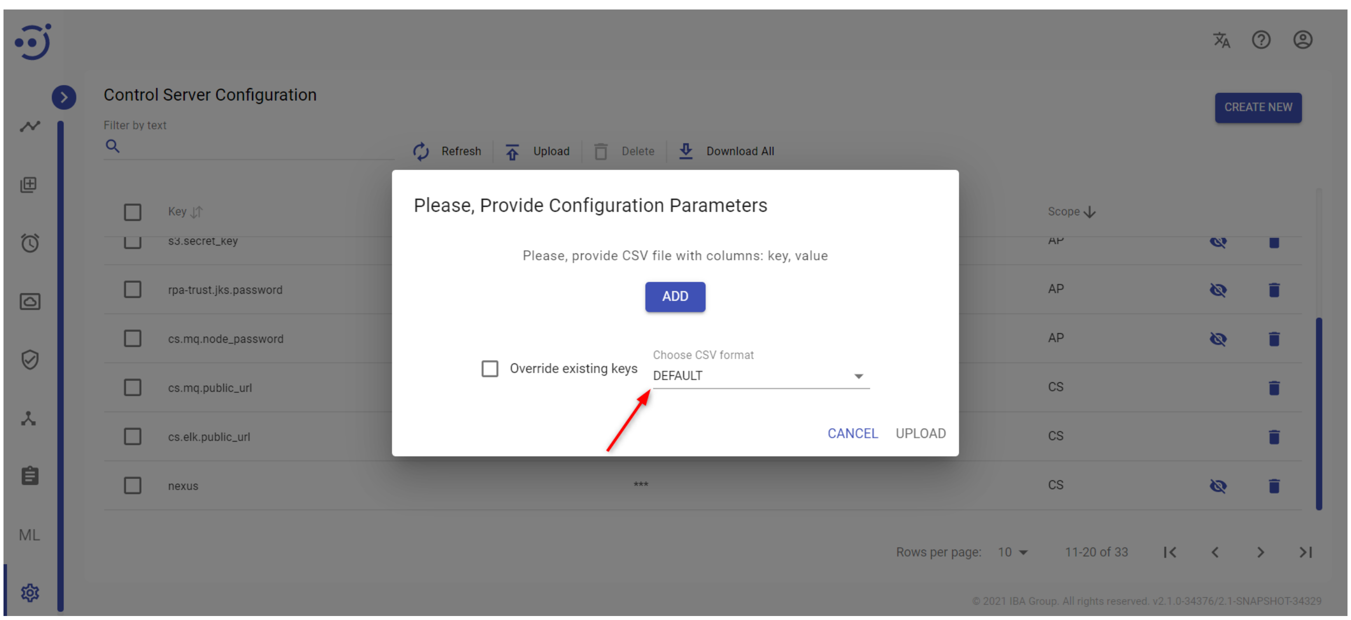
Upload a CS Configuration Parameter

The other way to create a CS Configuration Parameter is to **Upload** file with CS Configuration Parameters in CSV format:

1. Click **Upload**.

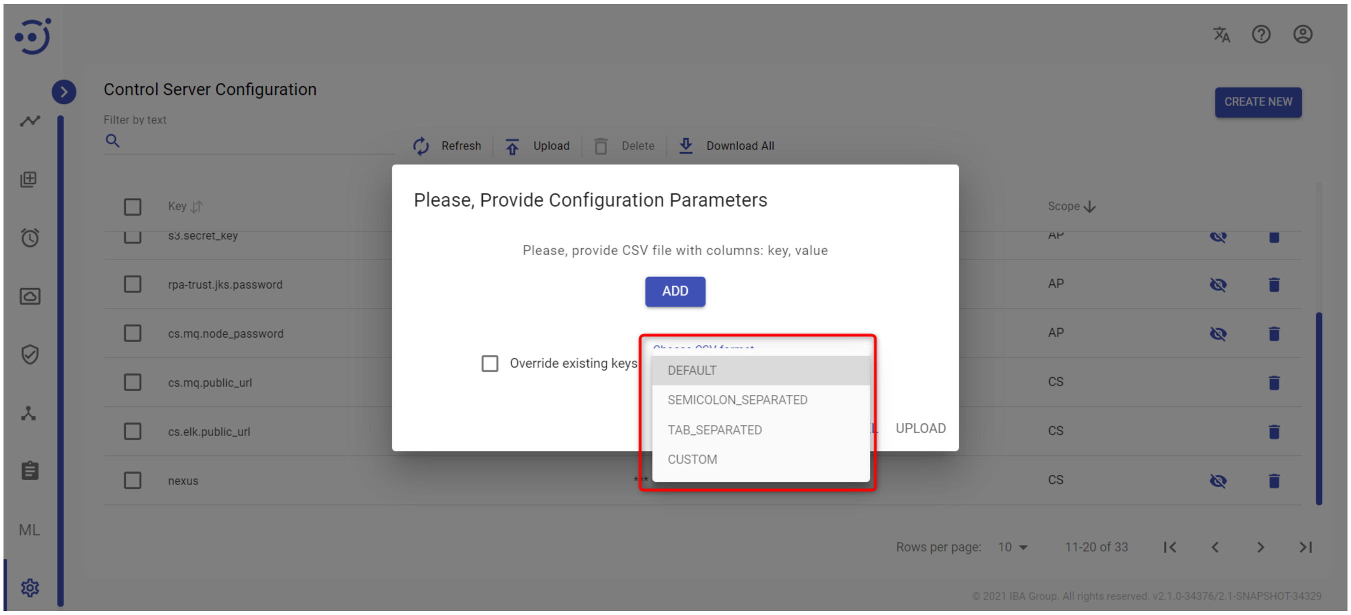


2. Choose CSV format:



CSV format settings:

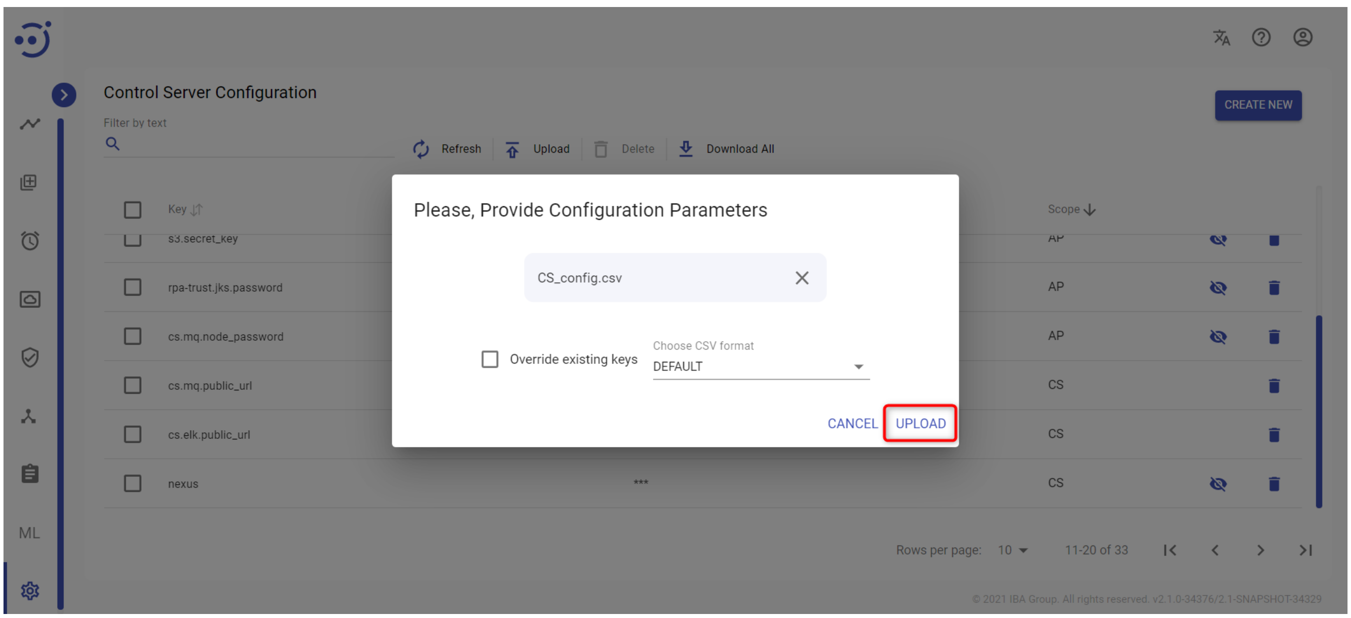
- DEFAULT - CSV file as a delimiter comma (,)
- SEMICOLON_SEPARATED - CSV file as a delimiter semicolon (;)
- TAB_SEPARATED - CSV file as a delimiter tab (\t)
- CUSTOM - CSV file as a delimiter comma (,) other options - for advanced user.



3. Click **ADD** to select CSV file and provide CSV file with columns: key, value, scope, secret.

4. Please, use **Override existing keys** checkbox if needed.

5. Click **UPLOAD** to load the file:

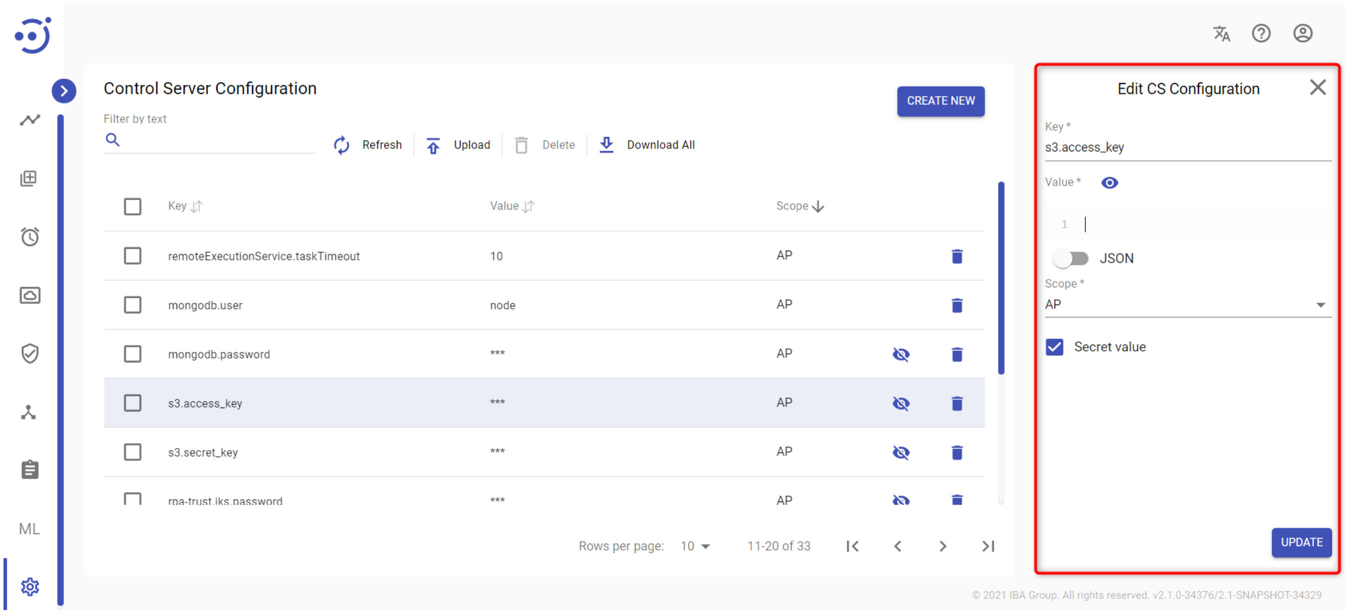


To upload a CS Configuration Parameter, you need to be granted Administration-CREATE permission (with Administration-READ). See (v. 2.2) Role Permissions.

Update a CS Configuration Parameter

To update an existing CS Configuration Parameter, you need to:

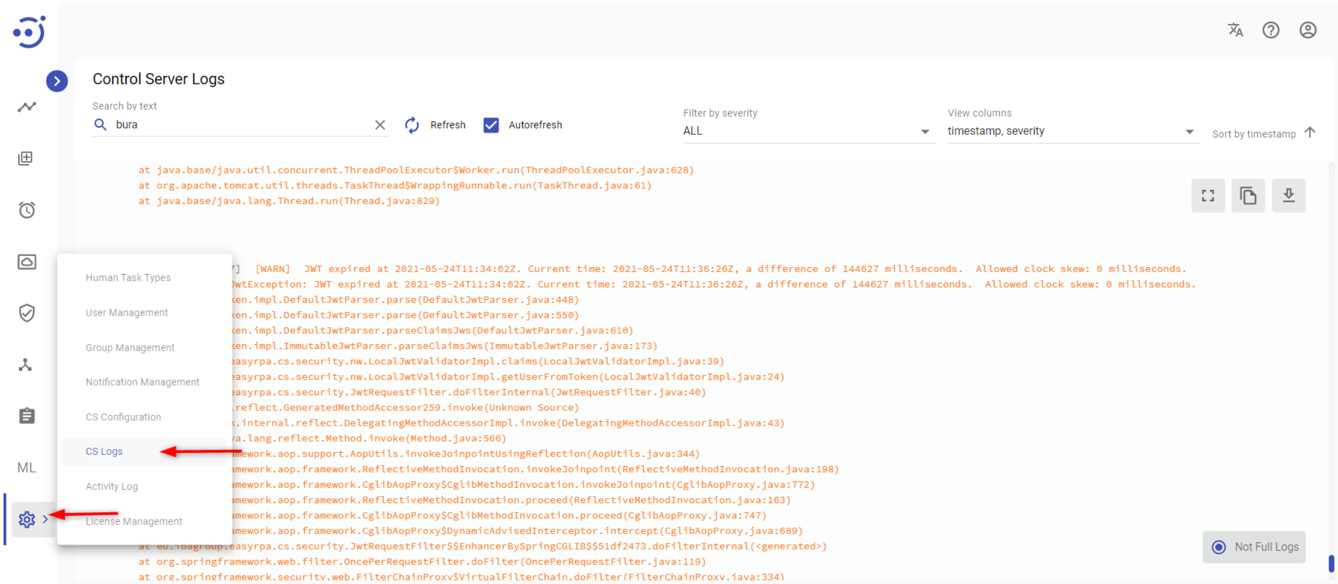
- Click on the corresponding CS Configuration Parameter.
- Change one of the field values on the **Edit CS Configuration** popup panel
- Click **UPDATE**.



To update the CS configuration parameter, you need to be granted Administration-CREATE permission (with Administration-READ). See Role Permissions .

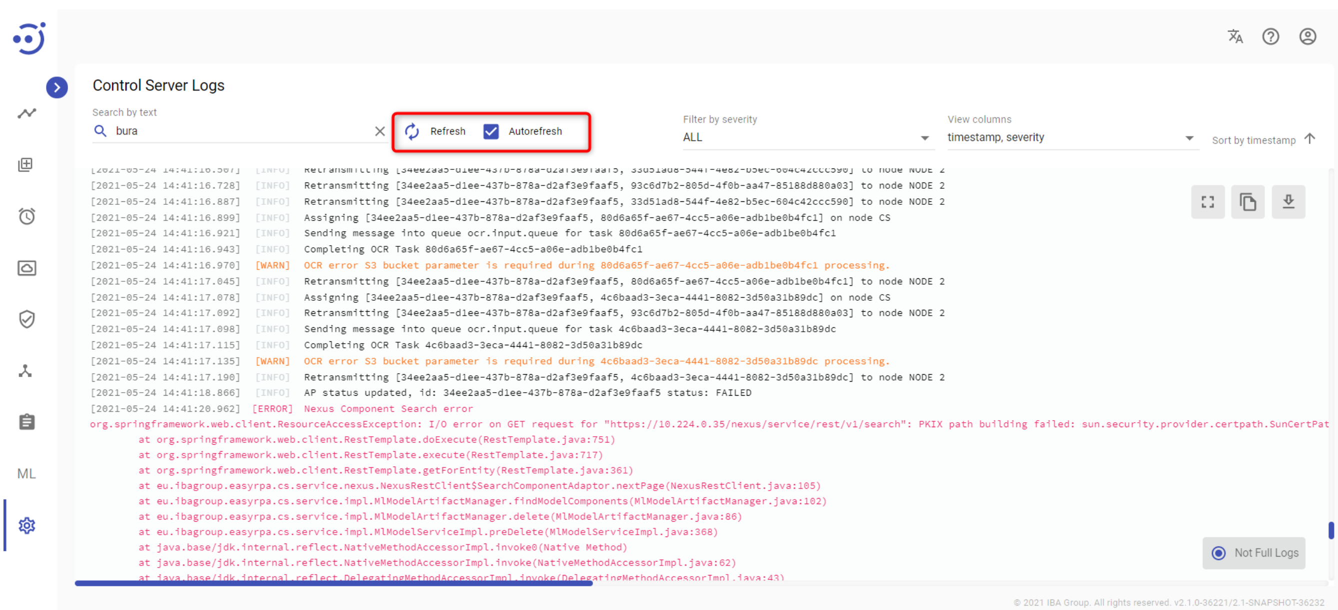
(v. 2.2) Control Server Logs

Control Server Log module displays the logs of the processes running at Control Server level, such as processes' assigning on nodes, auxiliary db operations, etc. You can access the module by clicking **Administration** **CS Logs**. The module is available for users from Administrators group only. To access the Control Server Log, you need to be granted Administration-READ permission. See [(v. 2.2) Role Permissions].



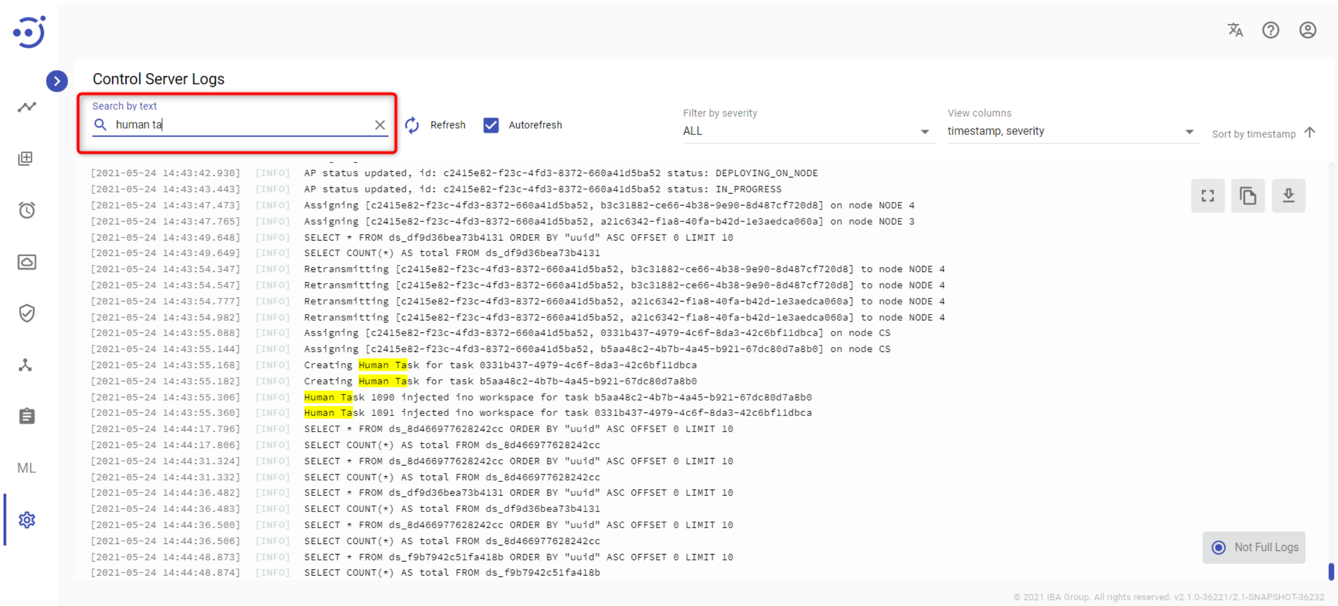
Control icons

- **Refresh** - to pull the latest logs from the server.
- **Autorefresh checkbox** - to turn on/off an automatic refresh of logs.



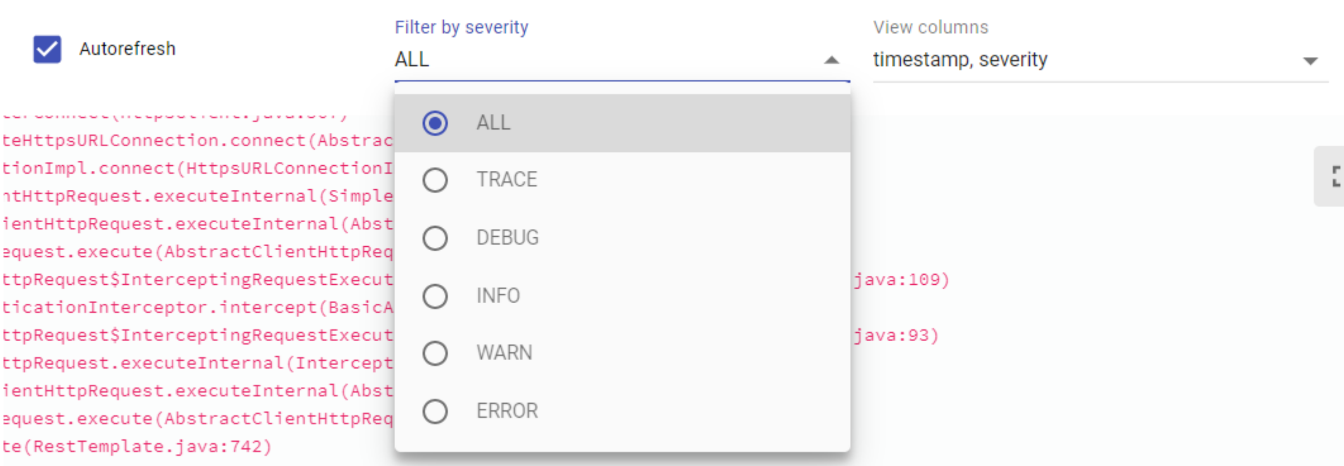
Search by text

You can search for a particular log by its text. The logs found are highlighted in yellow.



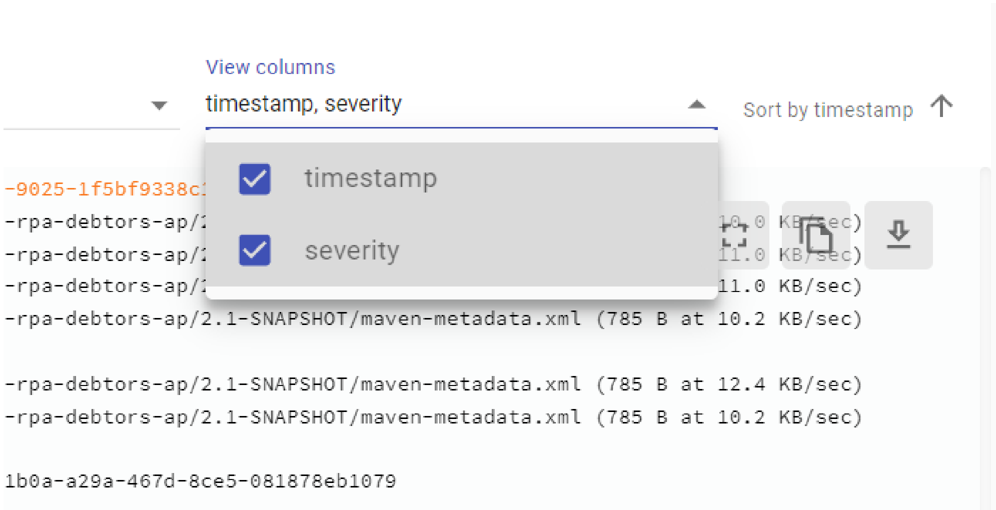
Filter by severity

Filtering allows you to choose the level of severity of the displayed logs from the dropdown menu. The available options are as follows:



View columns

You can add or remove the columns **timestamp/severity/node** name from the event log view.

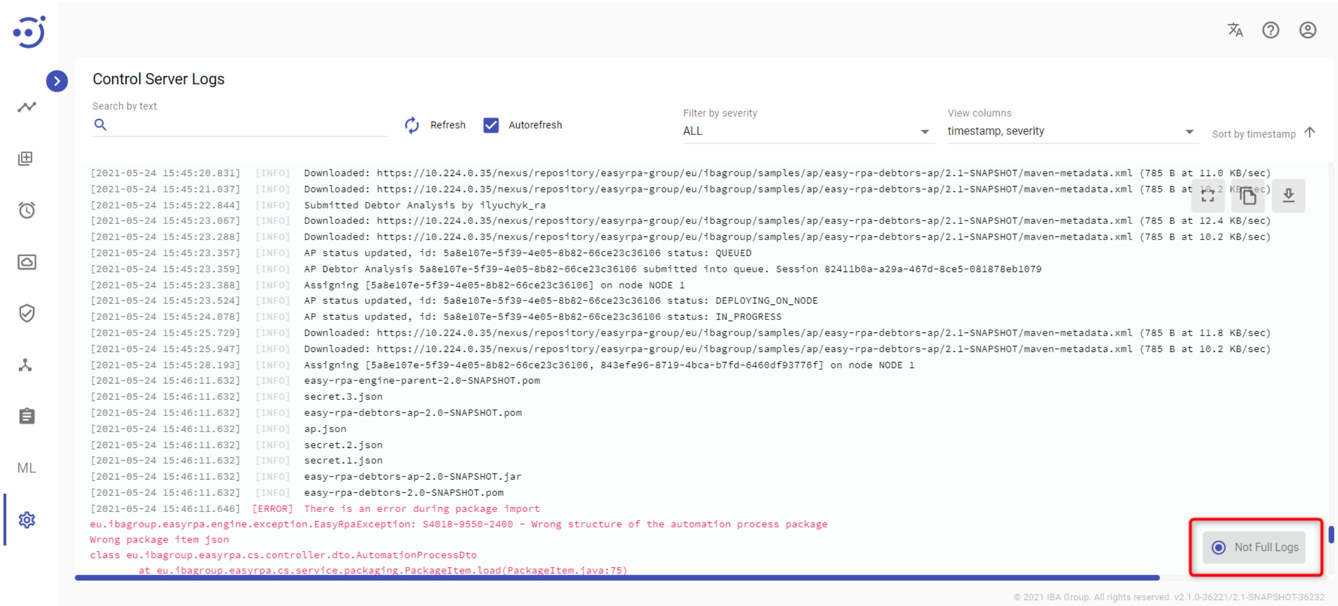


Sort by timestamp

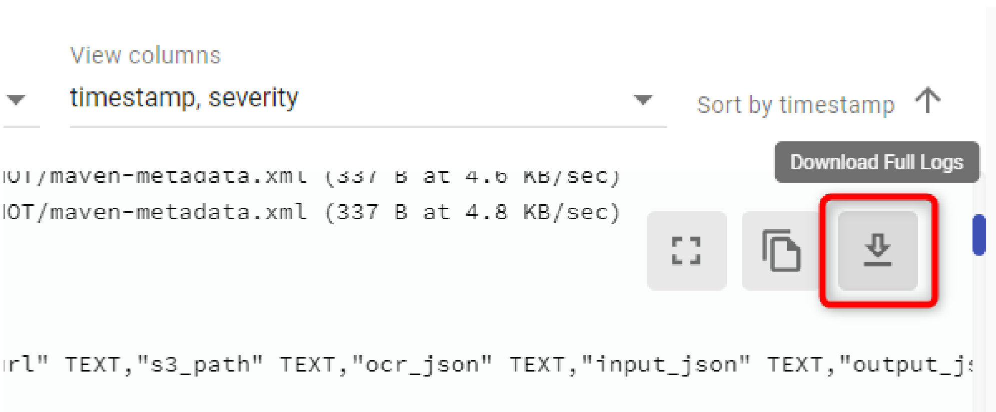
Ascending/descending logs sorting by the timestamp is allowed.

In the upper-right corner of the logs window there are buttons for opening logs in the full browser window, copying logs to the clipboard and downloading a .txt file with logs:

"Not Full Logs" indicator appears at the bottom right corner when the log becomes too long for one page:

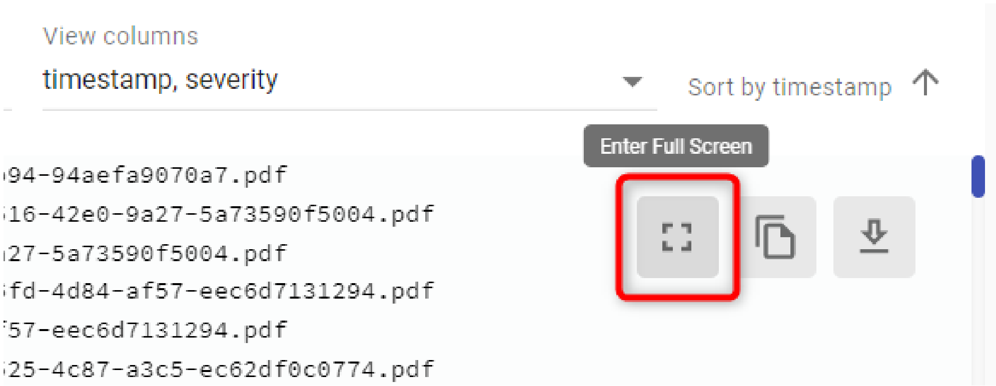


To download full logs use **Download** button:



To copy the displayed logs only use **Copy** button:

To view more log records simultaneously enter the full screen mode via pressing the corresponding button:


View columns
timestamp, severity
Sort by timestamp
Enter Full Screen
94-94aefa9070a7.pdf
16-42e0-9a27-5a73590f5004.pdf
27-5a73590f5004.pdf
fd-4d84-af57-eec6d7131294.pdf
57-eec6d7131294.pdf
25-4c87-a3c5-ec62df0c0774.pdf

(v. 2.2) Activity Log

- View Activity Log History
- View Activity Log Record Changes

The Activity Log module provides audit functionality to track user and system actions (login sessions, editing Automation Processes /Data Stores, creating AP runs, etc.).

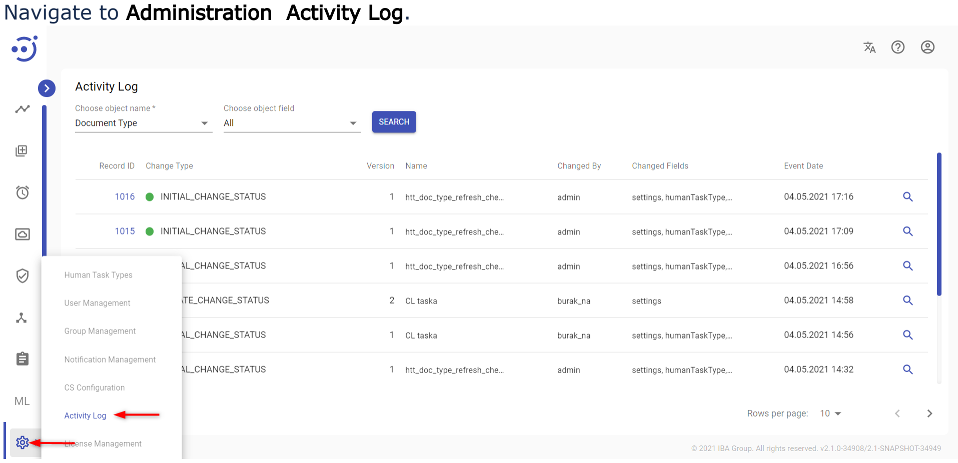
EasyRPA Control Server allows to perform the following actions:

- View the activity log history. To access the Activity log module, you need to be granted Administration-READ permission. See Role Permissions .
- View the particular activity record changes.

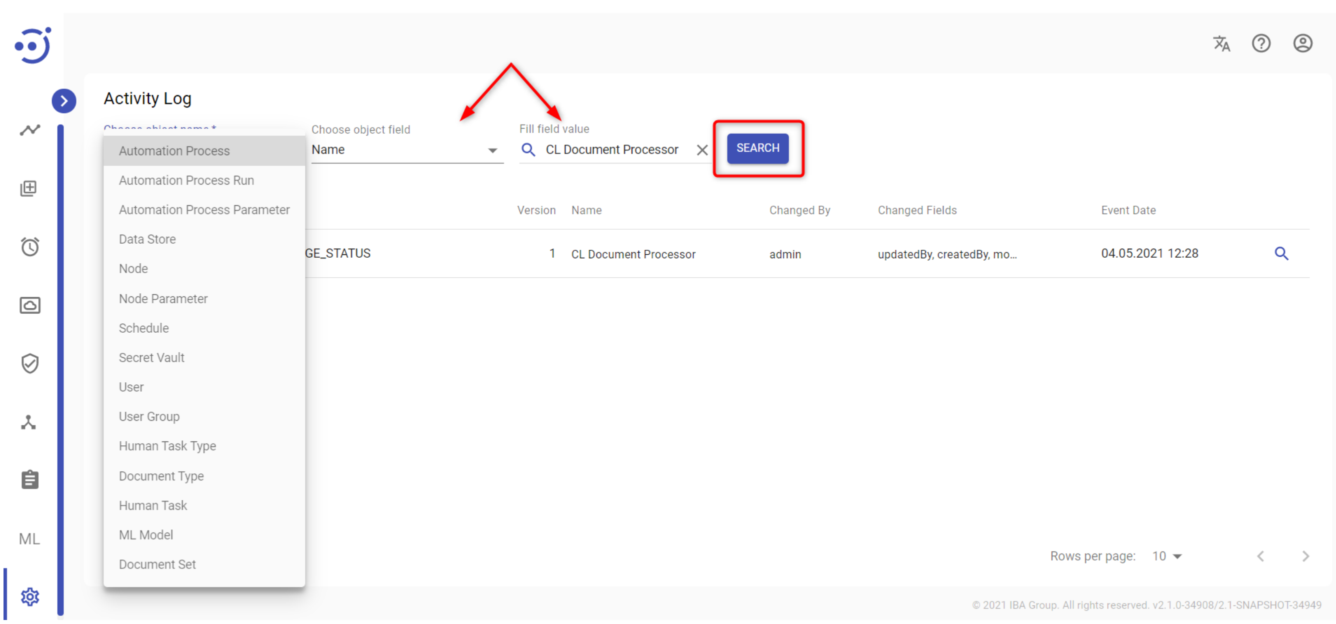
View Activity Log History

To view the Activity Log history, you need to:

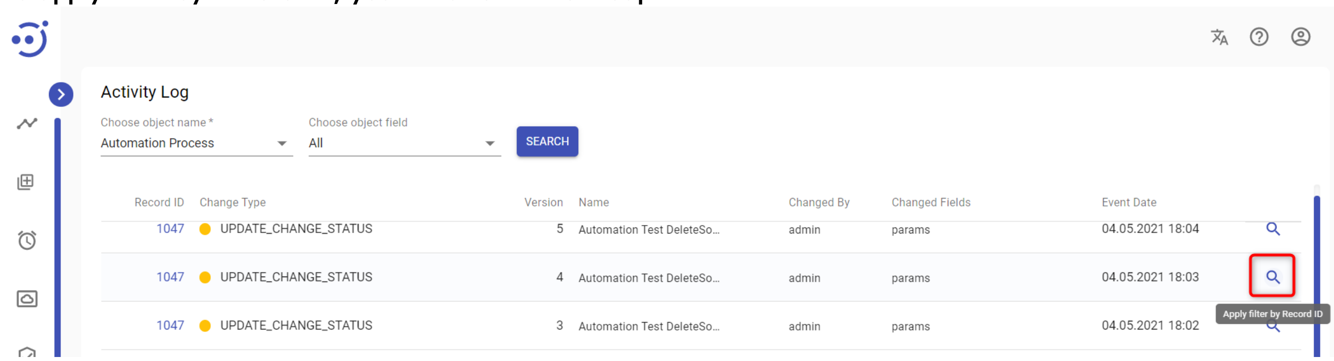
- Navigate to **Administration Activity Log**.



- **Chose object name** from the dropdown list.
- **Chose object field** from the dropdown list.
- If necessary, **fill field value** (the records can be found only if complete case-sensitive field values are entered).
- Click **Search** button.
⚠️Please note, that the searchable value should be entered completely into the Search field. A full match is the only way to search.



To apply filter by Record ID, you need to click on loupe



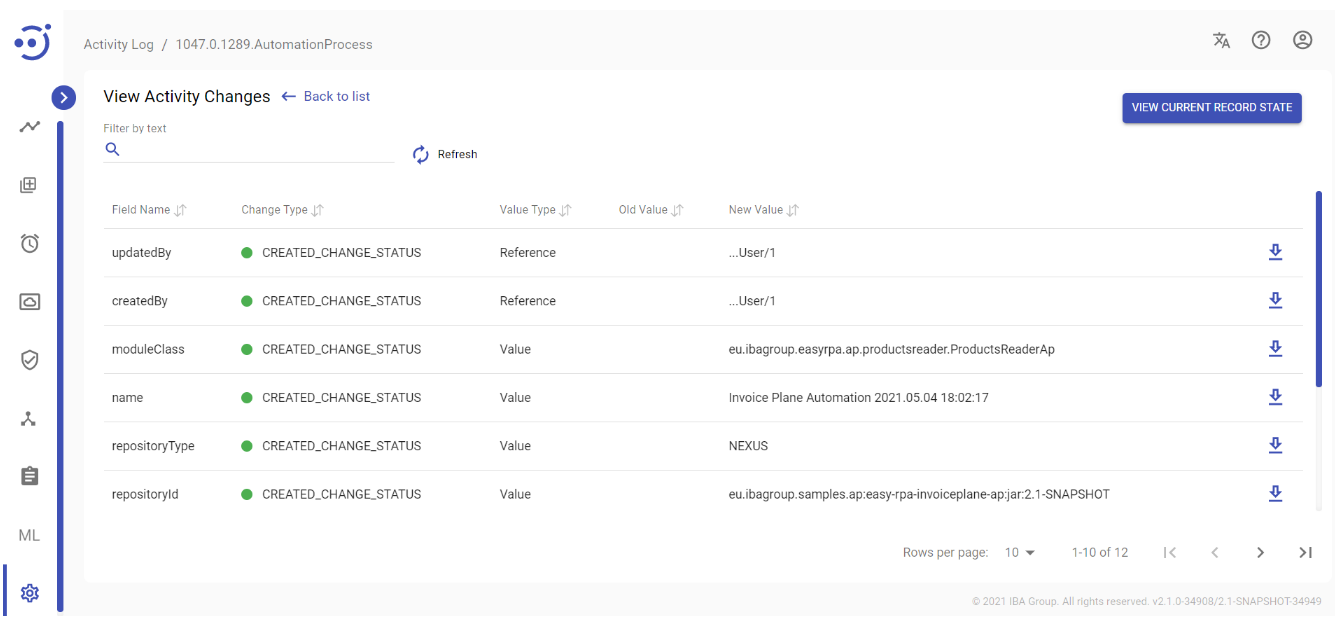
Columns Description

- **Record ID** - the ID of the entity on which the action was performed.
- **Change Type** - the type of the activity (Update, Create, Delete)
- **Version** - the entity change version.
- **Name** - the Name of the object.
- **Changed By** - an author of the performed action.
- **Changed Fields** - the field(s) that have been changed.
- **Event Date** - the date and time of the performed action.

View Activity Log Record Changes

To view the particular activity record changes, you need to:

- Navigate to **Administration Activity Log**.
- Click on the corresponding Activity Log **Record ID**.

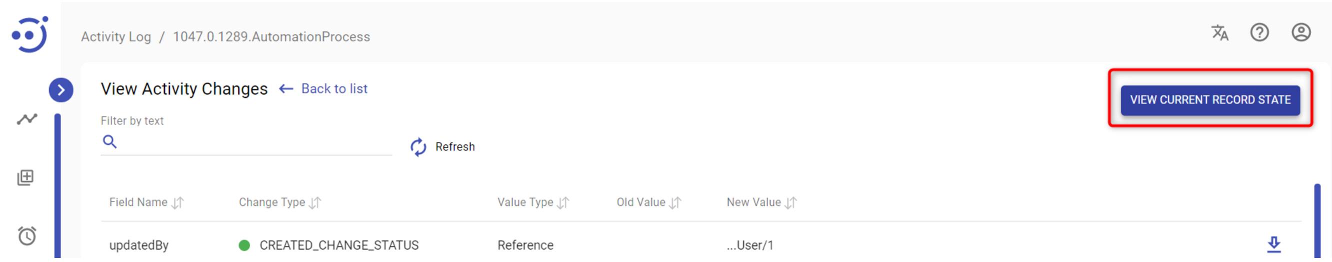


Columns Description

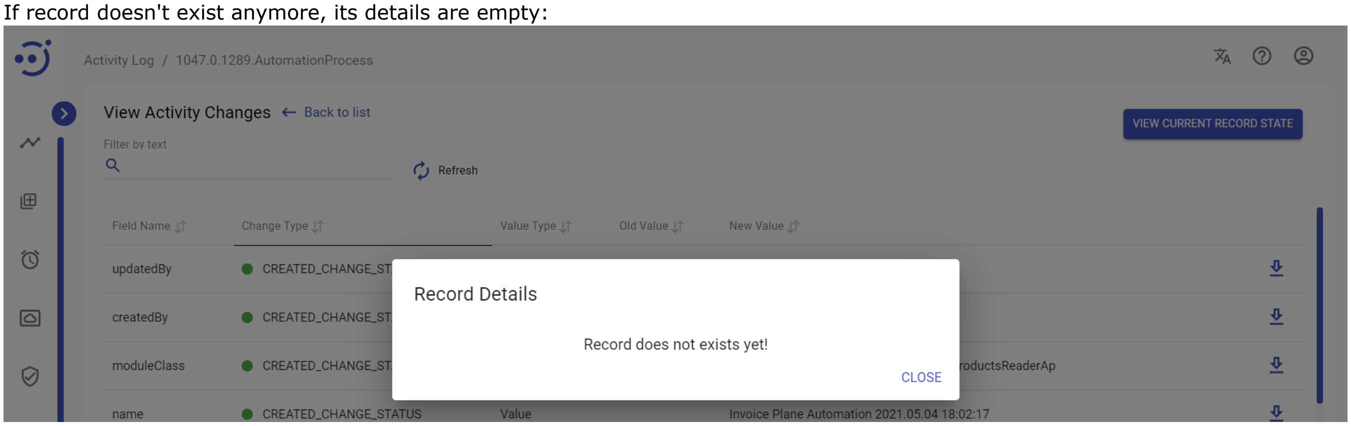
- **Field Name** - the name of the field modified.
- **Change Type** - the type of action performed. (Created, Deleted, Updated)
- **Value Type** - the type of value on which the action was performed. (Value, List, Reference)
- **Old Value** - the value before the action is performed (empty for "Created" Change Type)
- **New Value** - the value after the action is performed (empty for "Deleted" Change Type)
- **Download Activity** - to download existing record.

View Current Record State

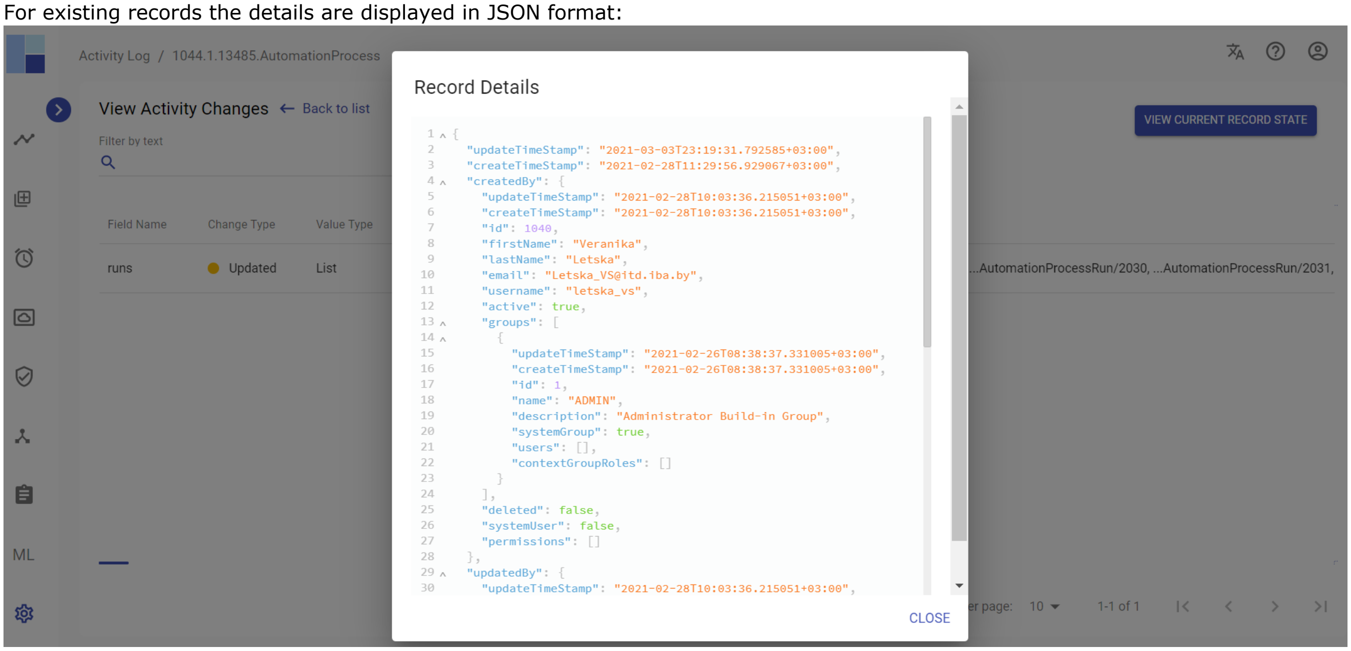
Button **View current record state** allows to view the actual state and others details of the Record:



If record doesn't exist anymore, its details are empty:



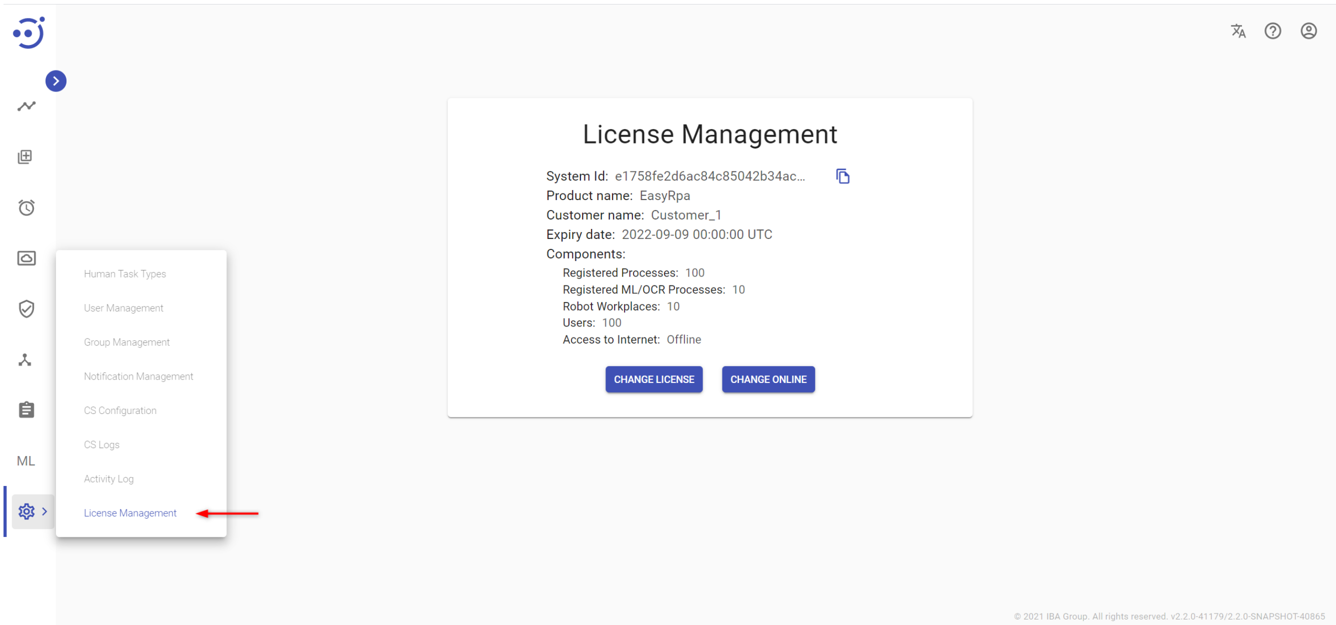
For existing records the details are displayed in JSON format:



(v. 2.2) License Management

The License Management module displays the current license information and allows you to upload and replace the current license.

You can access the module by clicking **Administration License Management**.

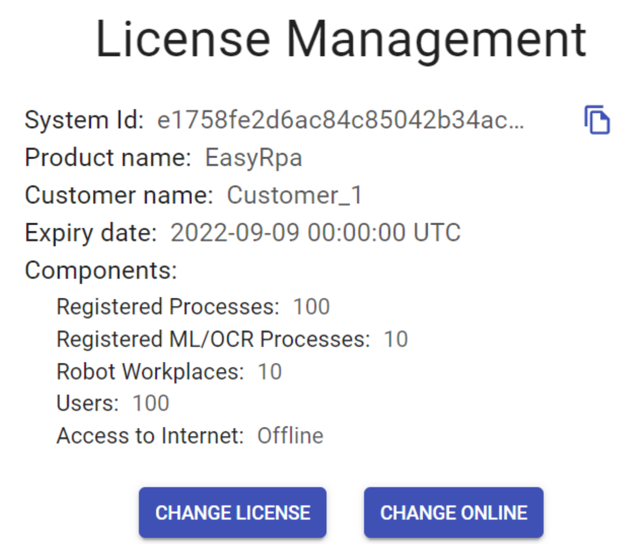


To access the License Management module, you need to be granted Administration-ALL-READ permission. See (v. 2.2) Role Permissions.

License General Information

The current license information displays the following information specified in the license:

- System Id - a unique system identifier of the particular instance.
- Product name - the name of the licensed product
- Customer name - the name of the customer to whom the license is granted.
- Expiry date - the expiration date of the license.
- Components:
  - Registered Processes - the maximum number of RPA processes that can be registered in the Control Server (including the number of ML/OCR Processes).
  - Registered ML/OCR Processes - the maximum number of ML or OCR processes that can be registered in the Control Server. A process involving both ML and OCR counts as one process.
  - Robot Workplaces - the maximum number of Nodes available for automation processes execution.
  - Users - the maximum number of users in enabled status that can work simultaneously in the Control Server.
  - Access to Internet - a type of license access (Online/Offline).



Control icons

- Copy System Id - to copy a unique system identifier of the particular instance.

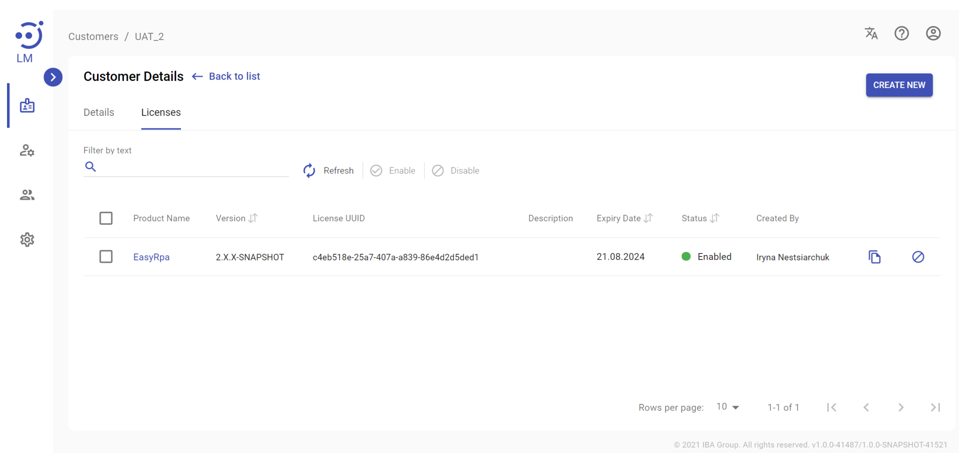
Upload the License

There are two possible ways to upload the license, depending on the required type of License Access: Online or Offline.

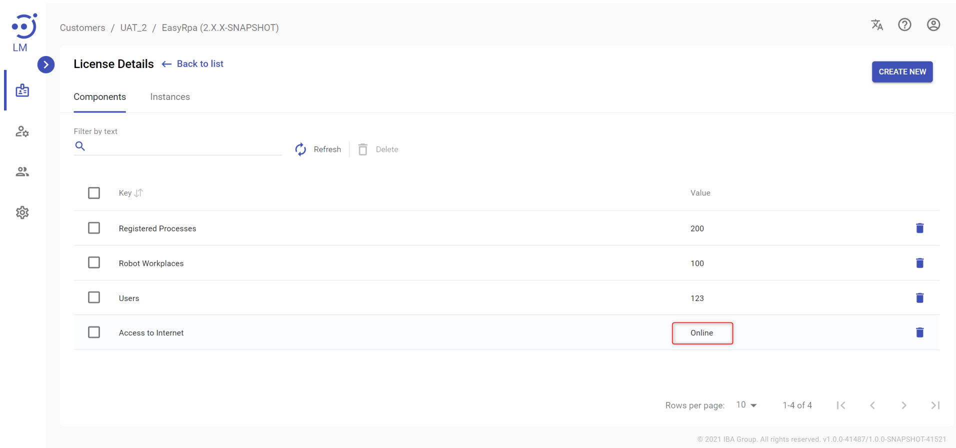
Online License

To upload the Online Licence, you know the need to:

1. **Create a new Online License** in the License Manager. See Create a new License.

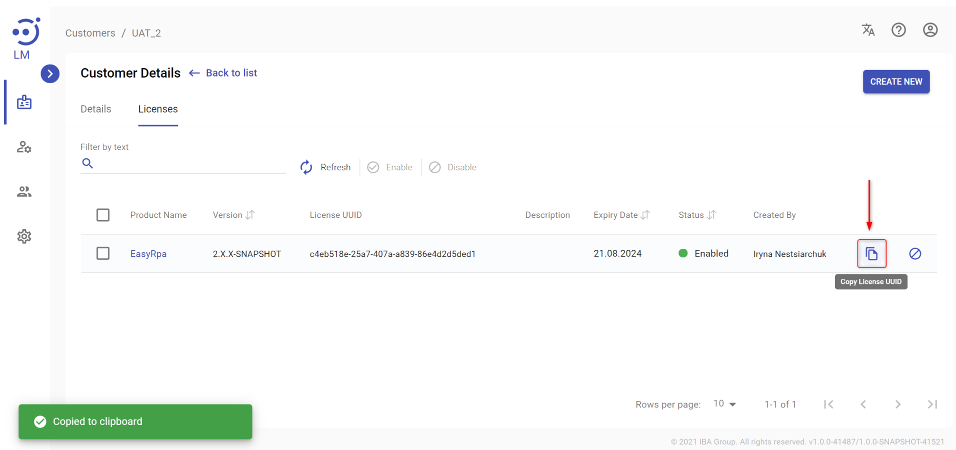


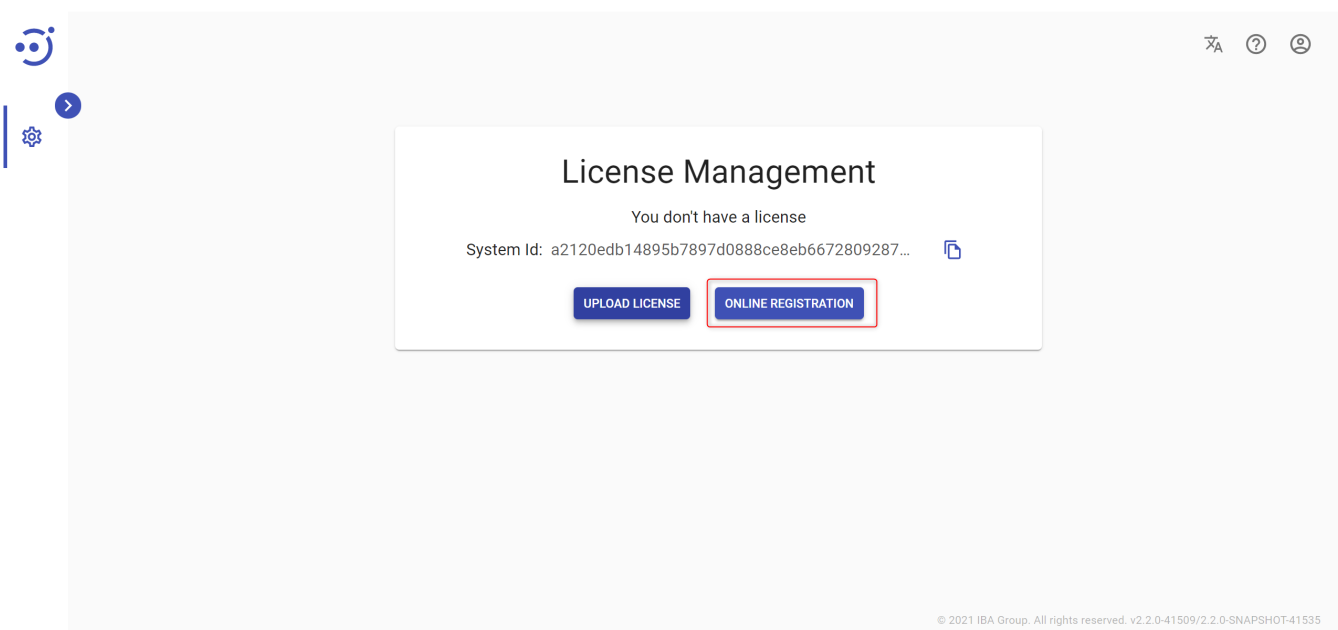
2. **Add License Components** in the License Manager. See Create a New Component.

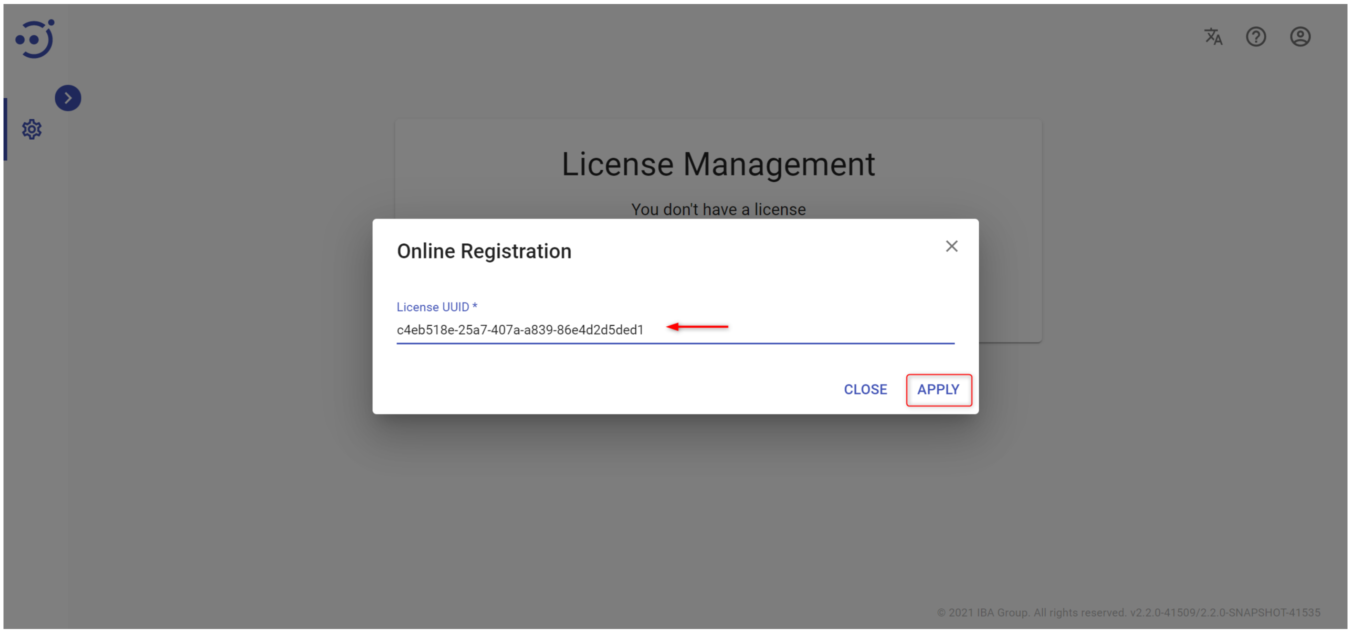


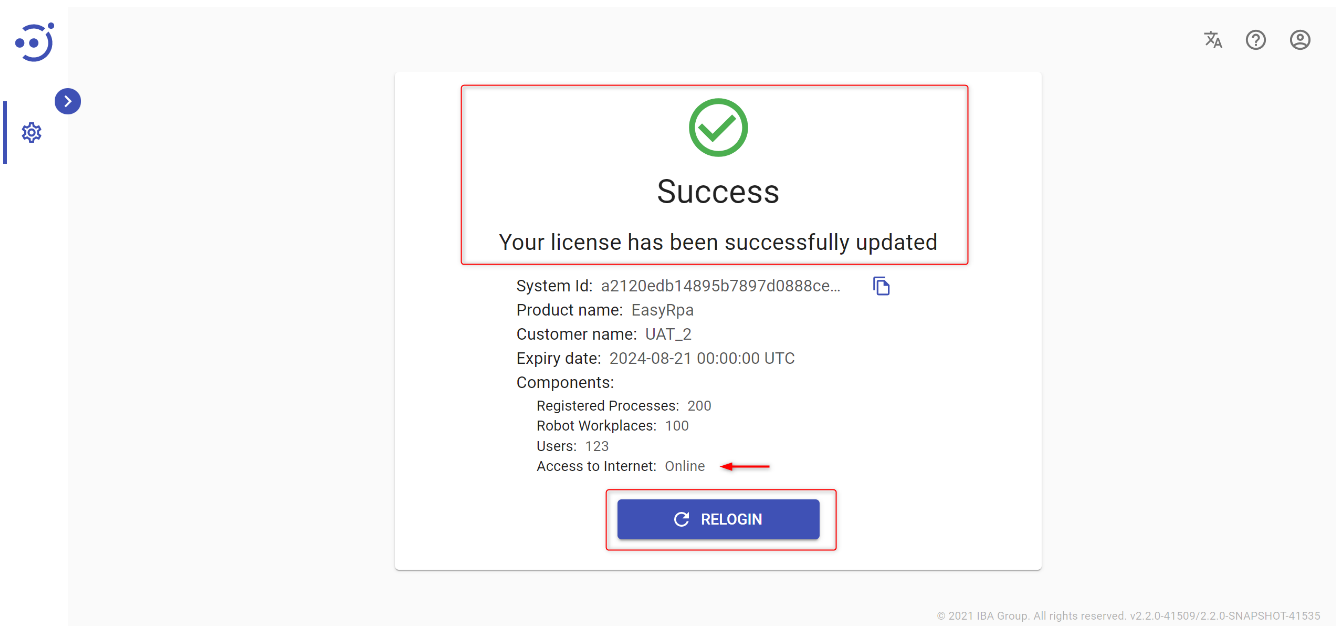
⚠️ The Access to Internet component should be chosen as **Online**.

3. **Copy** the appropriate **License UUID** from the License Manager Customer Details.



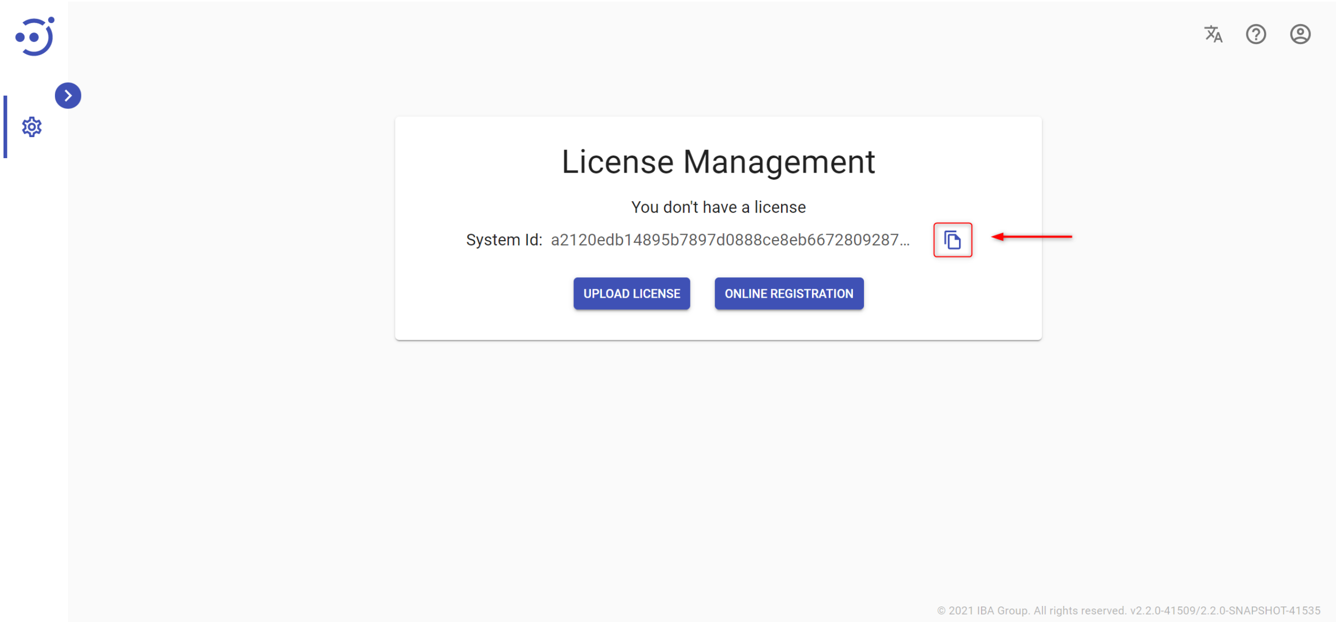




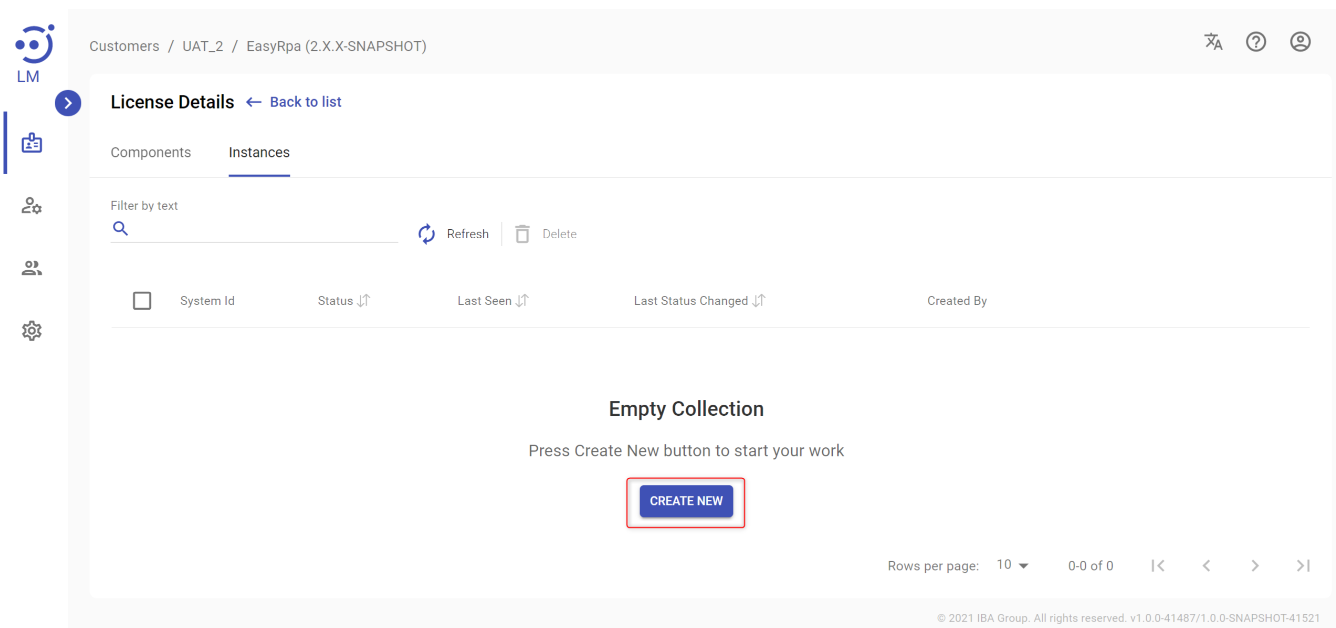


Offline License

Copy Sistem Id:

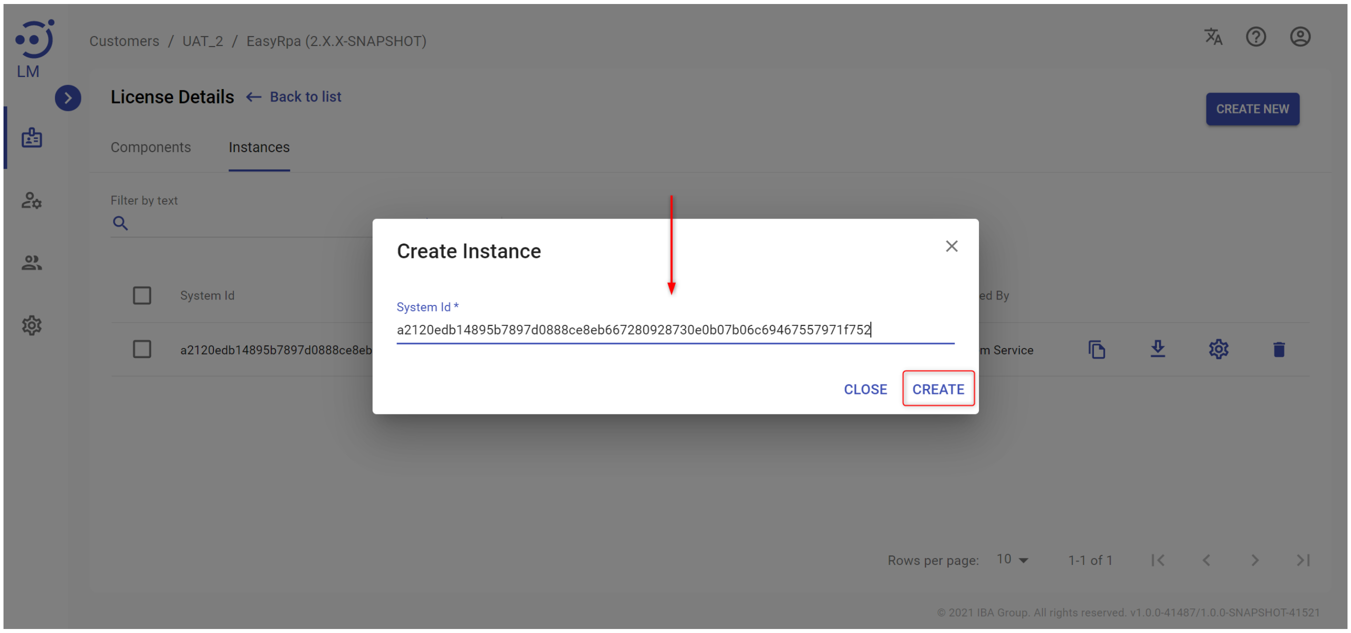


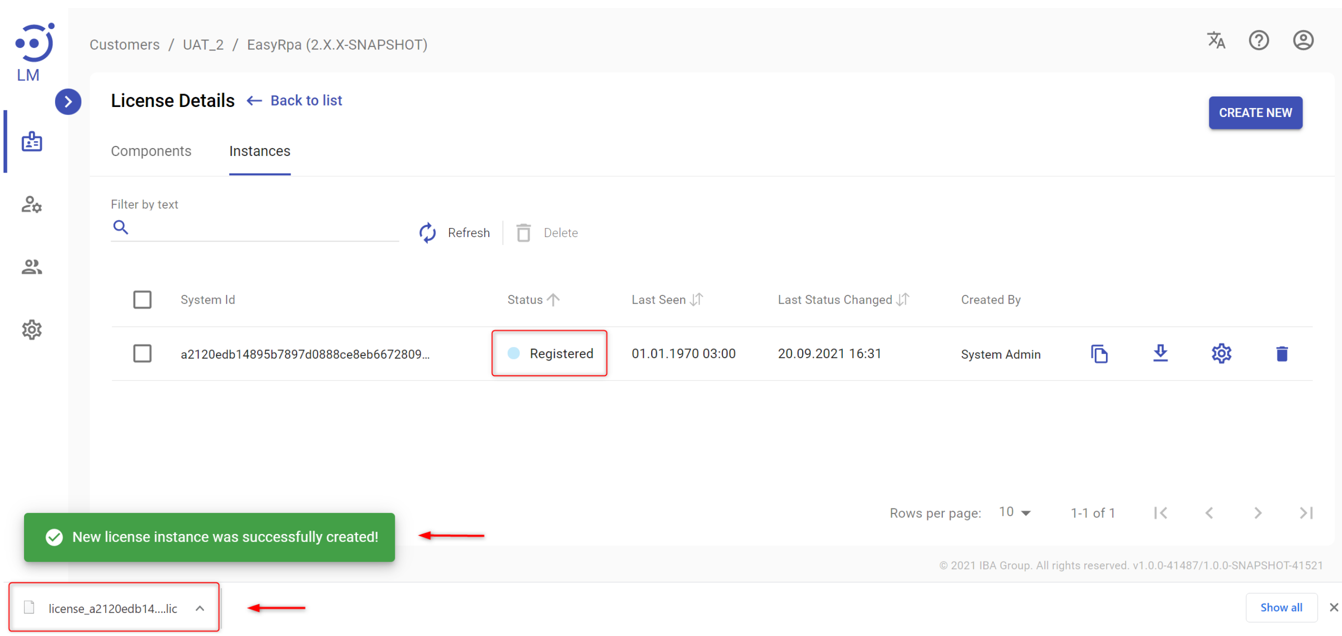
Click Upload License:

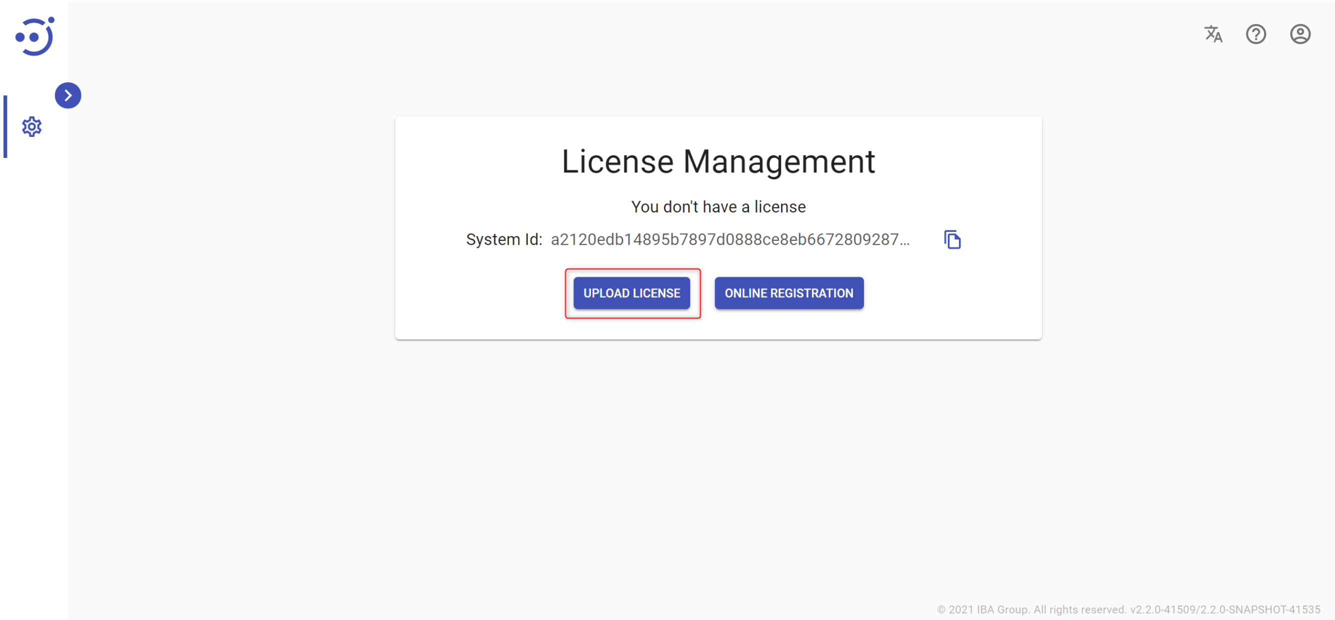


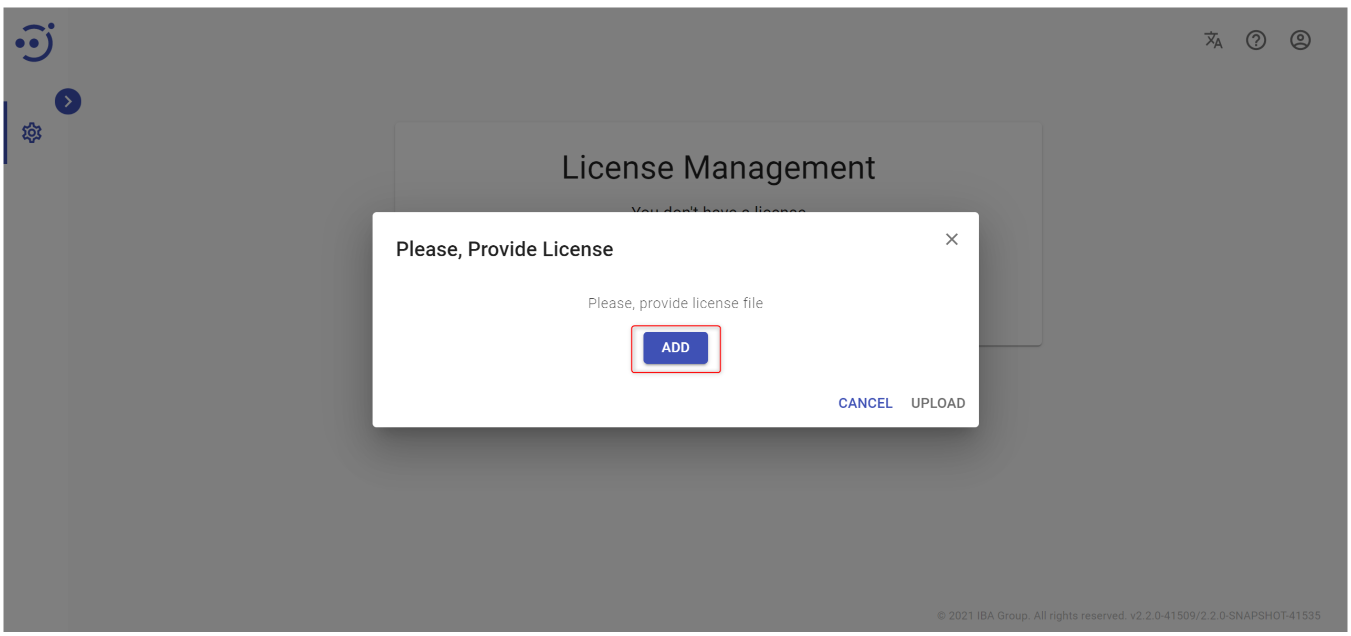
2.

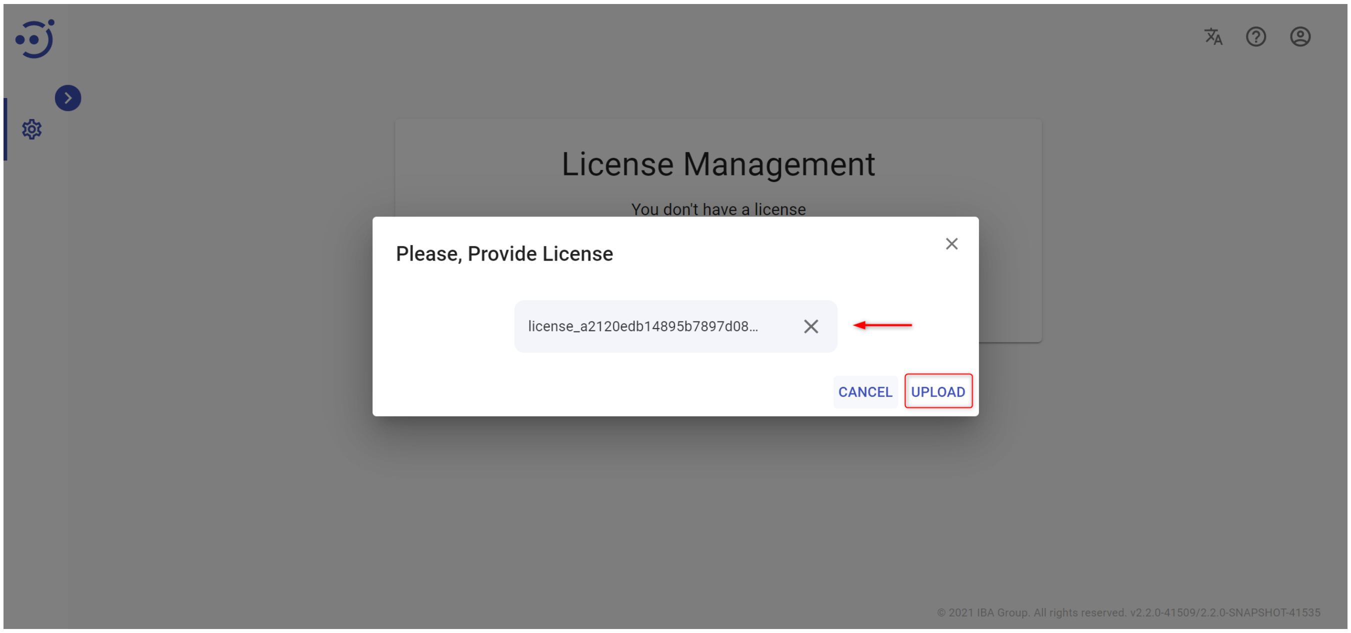
1. Create a new Instance and Copy License UUID in the License Manager. See Create a New Instance.

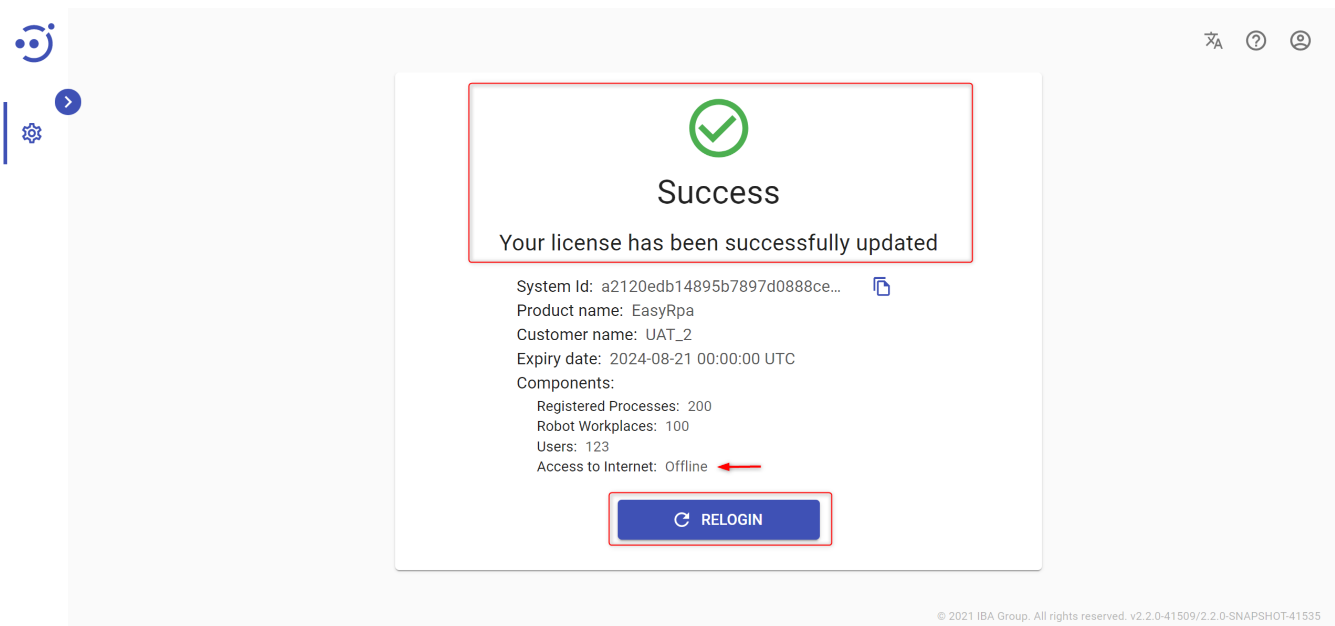

LM
Customers / UAT_2 / EasyRpa (2.X.X-SNAPSHOT)
License Details
Back to list
CREATE NEW
Components
Instances
Filter by text
System Id
a2120edb14895b7897d0888ce8eb
m Service
Create Instance
System Id *
a2120edb14895b7897d0888ce8eb667280928730e0b07b06c69467557971f752
CLOSE
CREATE
Rows per page: 10
1-1 of 1
© 2021 IBA Group. All rights reserved. v1.0.0-41487/1.0.0-SNAPSHOT-41521


LM
Customers / UAT_2 / EasyRpa (2.X.X-SNAPSHOT)
License Details
Back to list
CREATE NEW
Components
Instances
Filter by text
Refresh
Delete
System Id
Status
Last Seen
Last Status Changed
Created By
a2120edb14895b7897d0888ce8eb6672809...
Registered
01.01.1970 03:00
20.09.2021 16:31
System Admin
Rows per page: 10
1-1 of 1
New license instance was successfully created!
© 2021 IBA Group. All rights reserved. v1.0.0-41487/1.0.0-SNAPSHOT-41521
license_a2120edb14....lic
Show all


License Management
You don't have a license
System Id: a2120edb14895b7897d0888ce8eb6672809287...
UPLOAD LICENSE
ONLINE REGISTRATION
© 2021 IBA Group. All rights reserved. v2.2.0-41509/2.2.0-SNAPSHOT-41535


License Management
Please, Provide License
Please, provide license file
ADD
CANCEL
UPLOAD
© 2021 IBA Group. All rights reserved. v2.2.0-41509/2.2.0-SNAPSHOT-41535





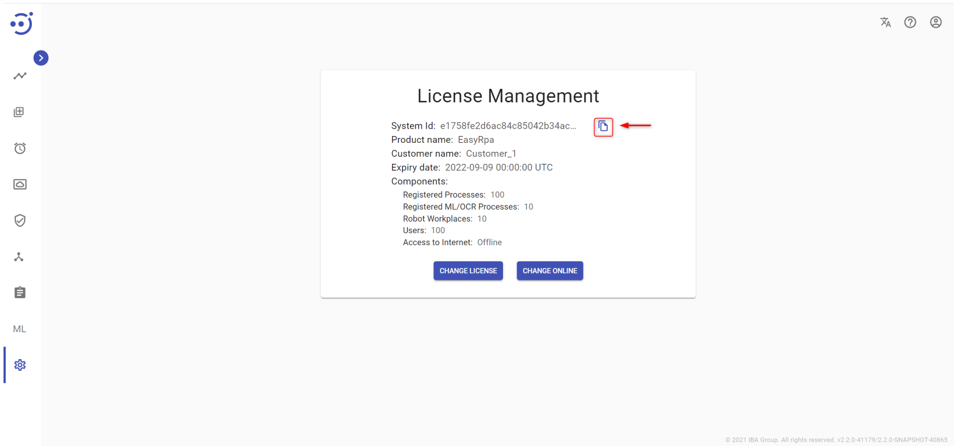
Replace the License

There are 2 ways to replace the current license depending on the type of license access (Offline or Online).

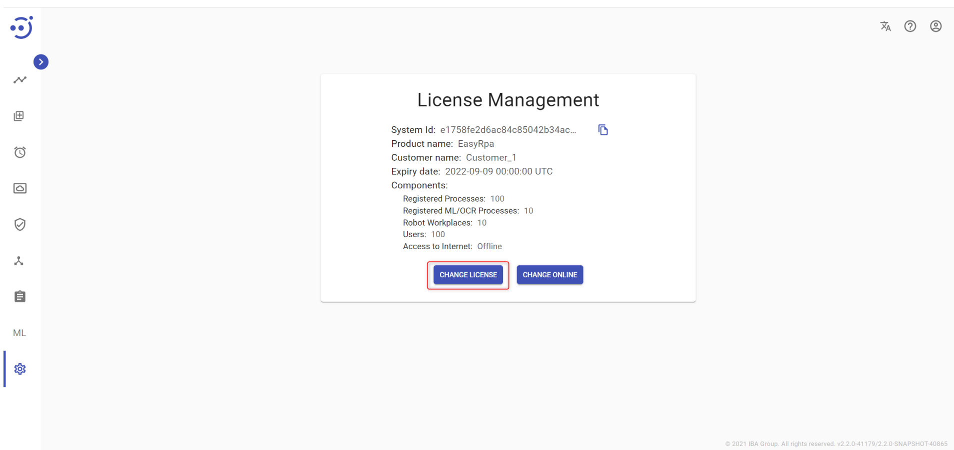
Offline License

To replace the Offline License, you need to:

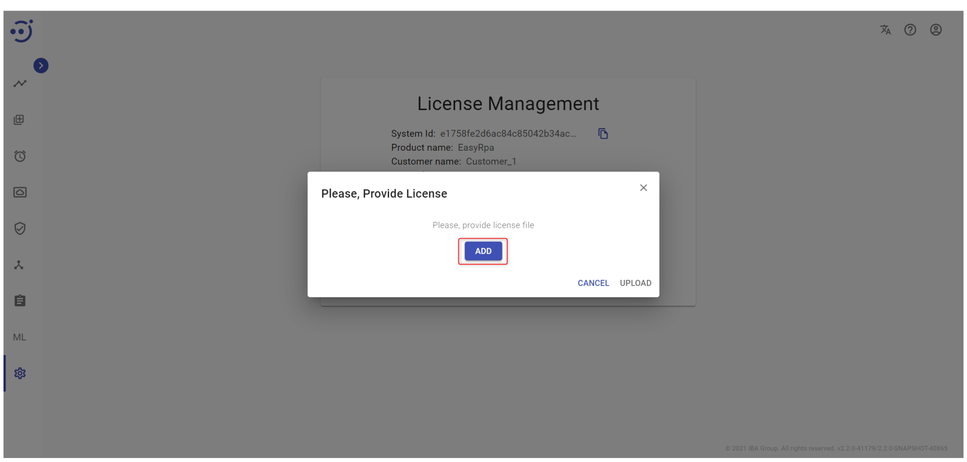
1. Click the **Copy System Id** icon.



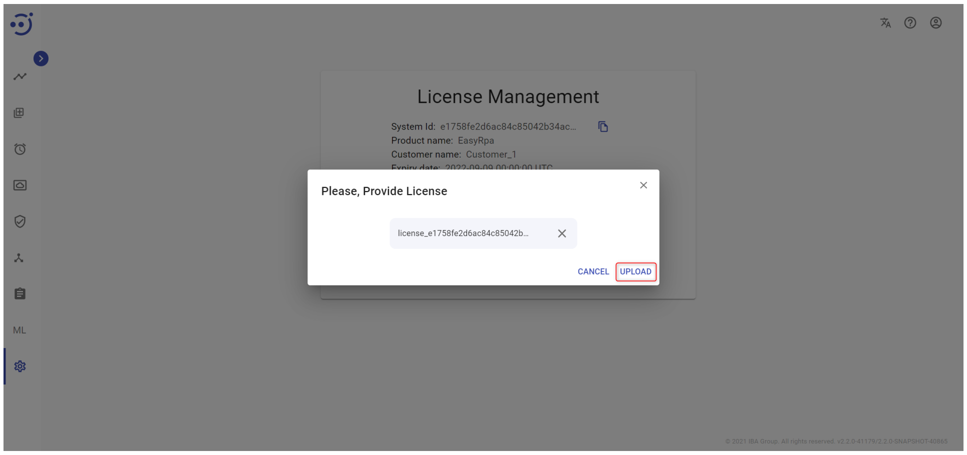
2. Create a new Instance in the License Manager. See [Create a New Instance](#).
3. Click **Change License**.



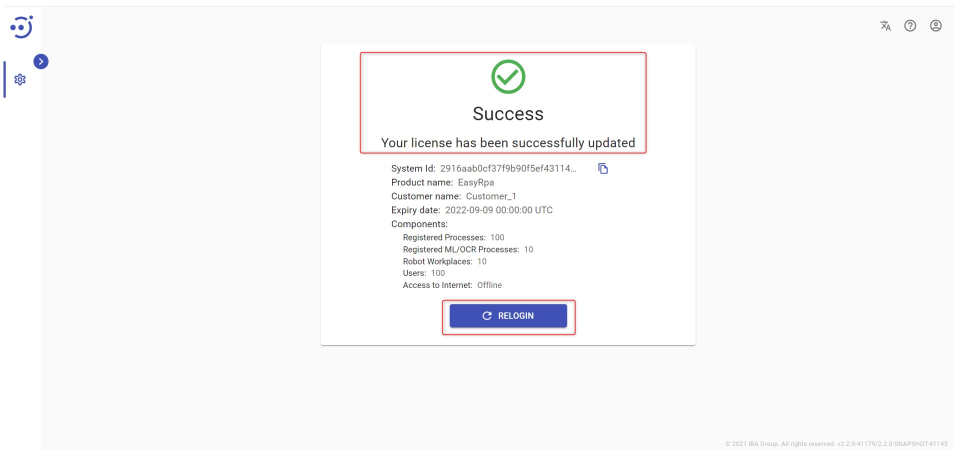
4. Click **Add** and choose the downloaded license file from the file system.



5. Click **Upload**.



6. As a result, the Success message will appear.
7. Click **Relogin** to apply the license and login to the EasyRPA Control Server.

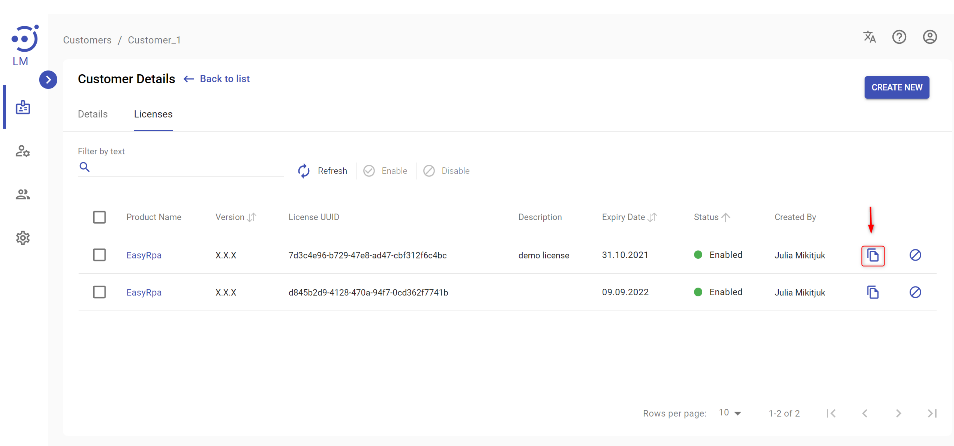


⚠️ If any changes have been made to the Offline license, you need to re-export the license file from the License Manager and replace the license file in the EasyRPA Control Server Lisence Management module.

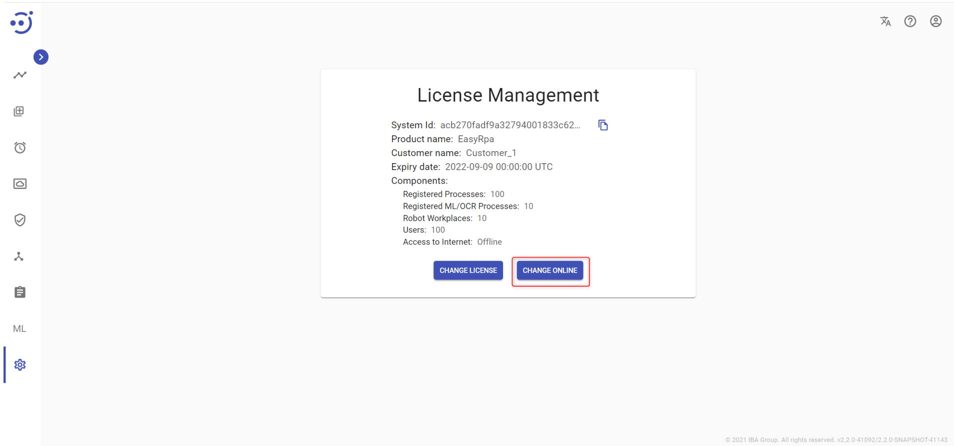
Online License

To replace the Online License, you need to:

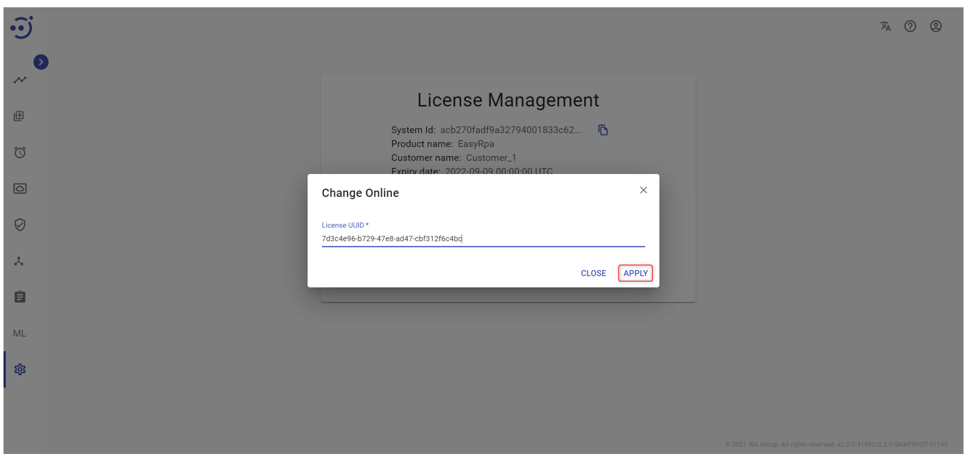
1. **Copy** the appropriate **License UUID** from the License Manager Customer Details.



2. Click **Change License**.



3. **Paste** the copied **License UUID** to the Change Online dialog.
4. Click **Apply**.



5. As a result, the Success message will appear.
6. Click **Relogin** to apply the license and login to the EasyRPA Control Server.